Impacts of Coastal Energy Development on New Jersey's Shorefront Recreational Resources and Economy

The New Jersey Department of Environmental Protection

Study Report
Appendix Volume 4

Appendix J: Case Studies

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APPENDICES VOLUMES

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Note to Readers

Changes in the descriptors of five of the six tourism regions used in the study **Impacts of Coastal Energy Development on New Jersey's Shorefront Recreational Resources** occurred after final editing of this appendix volume and are not included in it.

Consequently, the reader is asked to substitute the descriptors found in this volume (listed below, left) for those found in the summary report (listed below, right).

Former Version	Final Version
Densely Settled Commuter Suburb	Non-Seasonal Suburban
Northern Shorefront Year-Round and Rural Community	North Shore Non-Seasonal/Rural
Northern Shorefront Seasonal Communities	North Shore Seasonal
Southern Shore Year-Round and Rural Community	South Shore Non-Seasonal/Rural
Southern Shorefront Seasonal Communities	South Shore Seasonal

The tourism region **Resort Gambling** remains unchanged.

APPENDIX J. CASE STUDY APPLICATIONS OF THE COASTAL TOURISM RESPONSE MODEL

Introduction

This section of the report presents the analyses of five case studies by the Coastal Tourism Response Model (CTRM). The case studies are hypothetical situations in which prototype facilities are proposed for selected municipalities. The purpose of the case studies is to (1) test and demonstrate the various analyses carried out by the CTRM; (2) indicate the range of impacts that can result when the same facilities are located on different sites or different facilities are located on the same site; and (3) test the underlying principle of the model: that tourist response is not only a necessary variable for an accurate computerized analysis of energy facility impacts, it is also a factor of paramount importance to planners and policy analysts who direct the course of energy development on the New Jersey shorefront.

The five case studies presented here are a subset of the 1,305 possible combinations of the 15 prototype energy facilities in the 87 coastal municipalities that are included in this study. Figure 1 is a map showing the study area municipalities. The model's additional capability for handling major facility malfunctions, actual facility descriptions, and unique environmental conditions enable it to address a great range of social and economic impacts. Selection of the five cases was based on the feasibility of placing these facilities in particular municipalities. However, these case studies should in no way be construed as an assessment or review of actual development plans for the sites. The following scenarios were selected for the case study application:

Case Study #1	Lacey Township, Ocean County Coal-fired power plant	Map number Facility number	43 10
Case Study #2	Lacey Township, Ocean County Support base	Map number Facility number	43 1
Case Study #3	Manasquan Township, Monmouth County Support base	Map number Facility number	26 1
Case Study #4	Middle Township, Cape May County Coal-fired power plant	Map number Facility number	78 10
Case Study #5	Ocean City, Cape May County Support base	Map number Facility number	72 1

Case Study Comparison

Table 1, Comparison of Case Study Indicators summarizes some of the essential statistics produced by each of the five case studies. Also included are visitor expenditure and enumeration data for the selected municipalities. To simplify the analysis across the 11 years evaluated, figures are taken from the year of peak construction expenditures and the second year of facility operation.

Table 1 indicates that the social and economic impacts of facility construction and operation vary considerably depending on the facility's scale and the level of tourist activity in the area. Given certain combinations of variables, employment losses may be substantial in New Jersey and even greater in the shorefront study area. Severe repercussions on employment and sales in the local tourism industry could result from the environmental impact on recreational resources associated with energy facility development. The percentage and scale of receipts and value-added lost in some economic sectors will result in hardship for many individuals. Although the net employment impact may be positive, many jobs in local tourism industry establishments will be eliminated. Some of these unemployed persons will be employed in nearby municipalities that absorb some of the diverted tourism trade, but few of them will be suited for employment in the manual construction and plant operation jobs which are created.

The case studies demonstrate that some facility-related impacts are not of major concern for the New Jersey shorefront. The densely-settled shorefront with its abundant supply of second and seasonal homes can accommodate the housing needs of those working at the facility with little adverse effect. Because of the proximity of two large urban centers, New York and Philadelphia, and the generally high population density of New Jersey, relatively few families will migrate to the plant location. In general, the impact on municipal finances and housing demand can be expected to be minimal.

The study determined several factors that contribute to the loss of tourism but which do not cause dramatic differences among the case studies. Expenditures per person-day vary according to visitor accommodation, but differences in expenditures and the proportion of visitors in certain accommodations is relatively small and do not result in significant differences. Similarly, the facilities differ in the nature of the environ-

Table 1. Comparison of Case Study Indicators

Measure	Unit	Case Study Number				
		1	2	3	4	5
Municipality Map Number		43	43	26	78	72
Facility Type		10	1	1	10	1
Annual Facility Capital Expenditures (T3)	million dollars	215.6	30.0	30.0	215.6	30.0
Total Annual Facility Employment (T3)						
Construction Year	person-years	1361	47	47	1361	47
Operation Year		102	100	100	102	100
Annual Tourism in Municipality	visitor-days	727341	727341	511004	1995196	5223458
Municipality Proportion of all Visitor-Days in Shorefront Study Area	percent	0.94	0.94	0.66	2.59	6.78
Tourism Diverted from the Municipality (T9)						
Construction Year	visitor-days	239464	171301	150118	871297	1346324
Operation Year		217552	186117	160522	795971	1286543
Proportion of All Tourism Lost from the Municipality						
Construction Year	percent of	32.92	23.55	29.38	43.67	25.77
Operation Year	visitor-days	29.91	25.59	31.41	39.89	24.63

Table 1. Comparison of Case Study Indicators — continued

Measure	Unit	Case Study Number				
		1	2	3	4	5
Municipality Map Number		43	43	26	79	72
Facility Type		10	1	1	10	1
Annual Expenditures of all Travelers to Municipality Excluding Gambling and Home Rental	million dollars	22.9	22.9	16.7	72.4	170.9
Local Tourism Industry Final Demand Loss (T14)						
Construction Year	million dollars	7.832	5.600	4.986	32.259	44.385
Operation Year	million dollars	7.065	5.852	5.105	29.084	41.471
Proportion of Traveler Expenditures Diverted from the Municipality						
Construction Year	percent of dollars	34	24	30	45	26
Operation Year	percent of dollars	31	26	31	40	24
Major Tourism Industry Establishment Receipts for the Municipality (Eating, Lodging, Amus.)	million dollars	8.9	8.9	5.6	16.5	27.5
Local Tourism Industry Loss for Eating, Lodging and Amusement Firms (Lines 3-6 T14)						
Construction Year	million dollars	3.959	2.832	2.548	19.971	22.345
Operation Year	million dollars	3.536	2.872	2.467	18.799	20.270
Proportion of Primary Tourism Industry Receipts Diverted						
Construction Year	percent of dollars	44	32	46	121	81
Operation Year	percent of dollars	40	32	44	84	74
Value Lost by Seasonal Home Owners (T13)						
Construction Year	million dollars	1.644	1.179	0.997	1.280	10.577
Operation Year	million dollars	1.506	1.361	1.152	1.212	10.495
Employment Impact for New Jersey (T20)						
Construction Year	person-years	2720	211	214	2466	-201
Operation Year	person-years	157	183	188	-68	-188
Value Added Impact on New Jersey						
Construction Year	million dollars	76.102	6.829	6.883	71.746	-0.607
Operation Year	million dollars	10.390	6.471	6.555	7.036	-0.272
Employment Impact for New Jersey due to Tourist Response Only						
Construction Year	person-years	-74	-55	-53	-329	-467
Operation Year	person-years	-67	-60	-55	-292	-431

mental impacts that can be expected to occur. Visitor response to change in recreational resources often varies by as much as a factor of two between types of resources and from tourism region to region. However, this form of variation is small relative to the difference in the number of visitor person-days from municipality to municipality. A notable exception to this conclusion is the response of visitors to an environmental event such as an oil spill. Depending on the season of the occurrence, an oil spill in an area of moderate to high tourist activity could result in severe social and economic impacts.

A key indicator in table 1 is the number of tourists diverted from the environmentally affected municipality. The loss of expenditures that would have been made by these tourists (i.e., tourism industry final demand loss) can adversely affect the local economy. By looking at the number of travelers lost as a fraction of total tourism normally visiting the municipality, and the change in final demand as a fraction of the total tourism expenditure, the severity of the impact can be gauged. For example, during the peak construction year of a support base in Lacey Township (Case Study #2) over 171,000 visitor-days or almost 24 percent of the total tourism in the municipality will be diverted to another location. The absence of expenditures by these ourists will result in a loss of approximately $5.6 million in tourism industry final demand. Over $2.8 million of this loss is borne by establishments closely related to the tourism industry in which travelers make their expenditures for lodging, eating, drinking, and amusement. This expenditure is a considerable proportion (32 percent) of the $8.9 million in recepits reported by firms within the municipality in primary tourism industry economic sectors, which include lodging, eating, drinking, and amusement. This proportion somewhat overstates the scale of impact both because visitor expenditures for these items correspond to receipts in a range of economic sectors broader than the totaled sectors and because travelers lodged in Lacey Township spend money in other nearby municipalities offering other recreational services. Of course, this local impact is greater than impacts at the regional and state level because many of the travelers diverted from the municipality are received by other shorefront municipalities reducing the net loss for all municipalities.

Of the five cases shown, the impact on the local tourist economy is greatest in Case Study #5, a support base in Ocean City. While the percentage of tourists diverted from the municipality may be relatively small compared to the other case studies, the

magnitude of Ocean City's tourism economy (totaling 5.2 million visitor-days, or 6.8 percent of total visitor-days at the shorefront) results in substantial impacts to Ocean City. The number of tourists lost will be 1.3 million visitor-days in the peak construction year and 1.3 million during a typical operation year. The effect on local economic activity will be $44.4 million lost during peak construction and $41.5 million lost annually during the operating phase. This case study, as well as each of the other studies, indicates a correlation between large losses in actual dollars and those areas along the shorefront where seasonal tourism is most active.

Of the five case studies, the greatest percentage of loss to the tourism industry would occur in Case Study #4, coal-fired power plant in Middle Township. During construction, the municipality would lose over half of its tourism industry receipts. Most severely affected would be restaurants, motels, and similar tourism-dependent establishments. Middle Township incurs relatively heavier losses because it contains a higher percentage of visitors in hotels and motels than the other case study municipalities. The dollar loss for the local economy associated with a visitor-day of a traveler lodged in a hotel or motel is almost twice that of a visitor-day of a seasonal home occupant ($54 - $28 in 1982). The actual loss to persons both inside and outside New Jersey is much closer because the value of the seasonal home rental would be included in such a calculation (seasonal home visitor's total loss per visitor-day rising to $41).

Another useful indicator of a facility's impact is the loss or gain in the employment of residents in the state. For coal-fired power plants 1,361 person-years of employment are directly created by the construction of the plant during the peak year and 102 person-years are generated during each year of operation. For the support base, 47 person-years are required for construction and 100 person-years are created for annual operation. The net employment effect of a facility takes into account the direct, indirect, and induced employment generated by facility construction and operation, combined with the overall job losses due to the loss of tourism in the state. As shown in table 1, the two coal-fired power plants result in a fairly close gain in employment during the construction year (2,720 person-years in Case Study #1 and 2,466 in Case Study #4). During the operation year, however, the impacts are considerably different. In Lacey Township, the operation of the plant would result in a net addition of 157 person-years of employment. In Middle Township, the operation of the same plant results in a net loss of 68 person-years of employment annually. It is worthy to note that

of the two townships, Middle's tourist activity represents 2.6 percent of total shorefront tourism, while Lacey's tourist activity accounts for only .95 percent. Furthermore, local tourism amounts to about 2.0 million visitor-days in Middle compared to 730,000 in Lacey.

Alternative use of model programs to produce separate analyses of the impact of first the facility and second the response of travelers to change in environmental resource sheds light on the origin of impact. These impacts are provided in table T20 of each case study. Due to its greater scale, the coal-fired facility results in more employment, generating 2,720 person-years of employment in year three due to direct purchases and employment. This particular impact will not vary when the facility is analyzed in other sites because location will have little impact on either the make-up of suppliers or the number of out-of-state employees hired. However, loss of employment in a municipality will follow from negative tourist responses. For example, the operation of a support base in Ocean City would cause a net loss of 431 person-years of employment, 7 times the loss associated with the same support base located in Lacey Township. In each of the case studies, the employment loss associated with tourist response is essentially offset by the gains made from the construction and operation activities of the facility. Because the losses and gains in employment occur in different sectors of the economy, unemployment as a result of a facility's presence will be experienced by some, despite an overall gain in employment. Certainly, much of this unemployment will be felt by those employed in largely local tourism-related sectors depressed by negative tourist responses to the presence of the facility. Case Study #5 is the most affected in this way, largely because this is the location where the most tourists are found, tourists who are more responsive to a loss in recreational resources. As evidenced in differences between Case Study #1 and Case Study #2, the extent of environmental change also is a secondary influence.

Another important indicator selected for display in table 1 is the measure of value added. Value added is generally considered to be a more accurate measure of the change in the state's economic activity than is the gross economic output measure provided in I/O table T20. This is because by definition the gross output measure includes all the direct, indirect, and induced outputs, resulting in the double counting (or, in fact, multiple counting) of the value of the goods and services that are purchased from businesses in the state at each stage of the chain of direct or induced effects. Value

added, on the other hand, represents the gross economic output minus the goods and services (other than labor) purchased to produce the output. That is to say, it measures the value actually added to the product at each stage of production. Thus, value added consists mainly of wages and salaries, proprietor's incomes, corporate profits, and taxes.

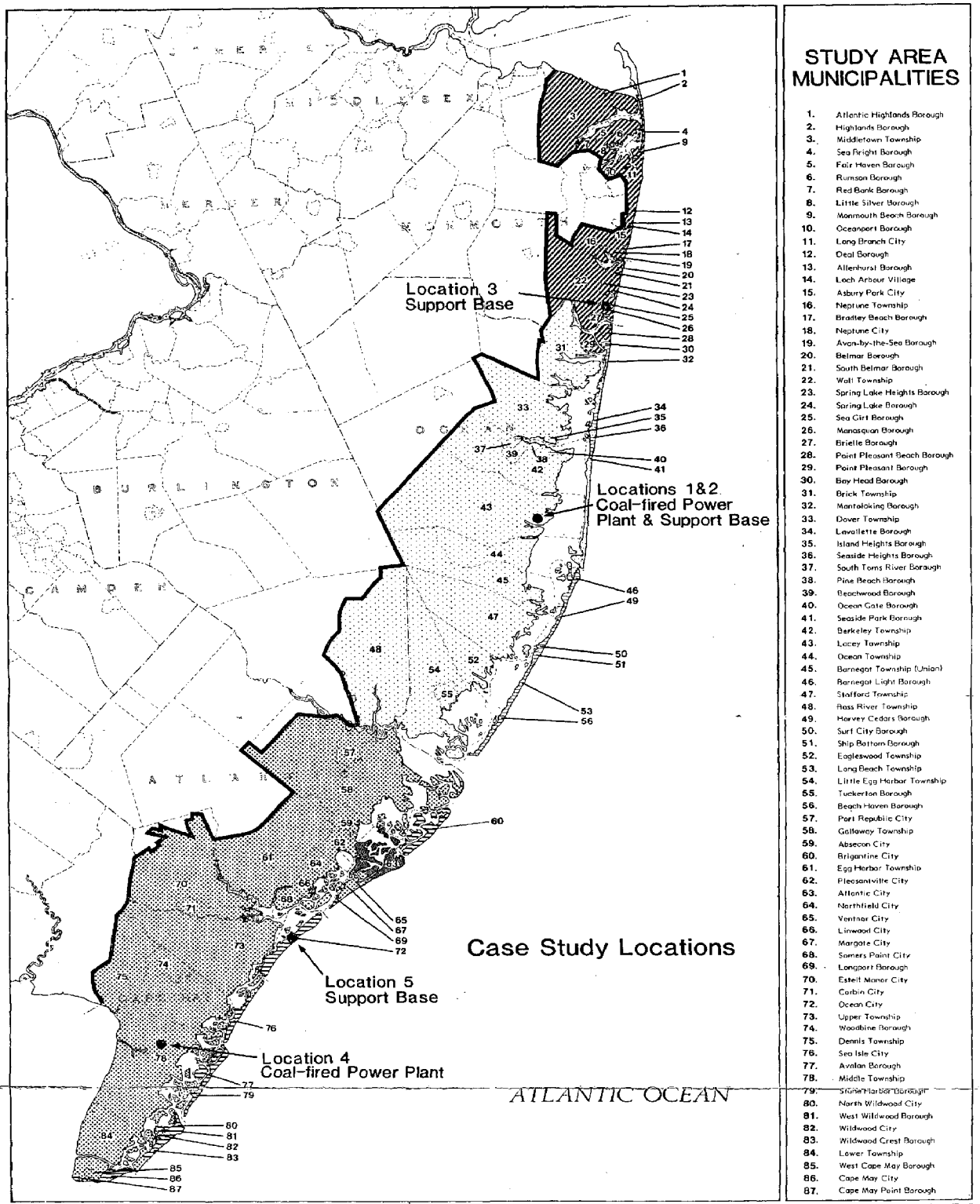
Table 1 indicates that value added results differ according to the location of the facility. During the peak construction year of a coal-fired plant, the value added figures for the Lacey Township and Middle Township cases are fairly close at $76 million and $72 million, respectively. During the operation phase, however, Lacey Township experiences an increase of almost $11 million in value added, while the increase in Middle Township is only $6.6 million. These operation year differences are once more attributable to the difference in tourist activity in each municipality.

Each of the three case studies considering a support base, Case Studies #2, #3, and #5, places the base in a different county. Case Studies #2 and #3, Lacey Township in Ocean County and Manasquan Township in Monmouth County, contribute $6.8 million and $6.9 million, respectively, in value added to the state's economy during the construction year. During the operation year, value added amounts to $6.5 million and $6.6 million. Though Lacey accounts for more of the total shorefront tourism than does Manasquan, both receive less than one percent of the total. In contrast, the support base in Ocean City, which accounts for 6.8 percent of total shorefront tourism, generates an overall decrease in value added in the state. There is a $600,000 decrease during the construction year and a $270,000 loss during annual operation.

In addition to the five case studies, a model analysis was performed on a hypothetical oil spill creating a notable impact for two months, June and July, on the beach of Ocean City, Cape May County. These months experience 42 percent of all visitor activity. This analysis considers only the loss of economic activity associated with visitor response. The results indicate that an oil spill would cause serious loss whose impact would last over time unless otherwise addressed by actions such as advertisement or lower rental rates. The analyses also points to the importance of the time of year when the oil spill occurs.

The analysis of the oil spill event showed an immediate diversion of 800,000 visitor-days from the area; two years later, 34 percent of the visitors diverted would still

not be replaced. For the entire shorefront, the tourism industry final demand loss would equal $5.7 million during the year of the spill event. However, this represents only 20 percent of the severe loss which would be experienced locally. For New Jersey, the oil spill would result in the loss of 230 person-years of employment and $4.1 million of value added in the year of the event. Further, the two-month event would result in a continuing impact which would decline slowly, with a loss of 68 person-years of employment for two years following the oil spill.



STUDY AREA MUNICIPALITIES

1. Atlantic Highlands Borough
2. Highlands Borough
3. Middletown Township
4. Sea Bright Borough
5. Fair Haven Borough
6. Rumson Borough
7. Red Bank Borough
8. Little Silver Borough
9. Monmouth Beach Borough
10. Oceanport Borough
11. Long Branch City
12. Deal Borough
13. Allenhurst Borough
14. Loch Arbour Village
15. Asbury Park City
16. Neptune Township
17. Bradley Beach Borough
18. Neptune City
19. Avon-by-the-Sea Borough
20. Belmar Borough
21. South Belmar Borough
22. Wall Township
23. Spring Lake Heights Borough
24. Spring Lake Borough
25. Sea Girt Borough
26. Manasquan Borough
27. Brielle Borough
28. Point Pleasant Beach Borough
29. Point Pleasant Borough
30. Bay Head Borough
31. Brick Township
32. Mantoloking Borough
33. Dover Township
34. Lavallette Borough
35. Island Heights Borough
36. Seaside Heights Borough
37. South Toms River Borough
38. Pine Beach Borough
39. Beachwood Borough
40. Ocean Gate Borough
41. Seaside Park Borough
42. Berkeley Township
43. Lacey Township
44. Ocean Township
45. Barnegat Township (Union)
46. Barnegat Light Borough
47. Stafford Township
48. Bass River Township
49. Harvey Cedars Borough
50. Surf City Borough
51. Ship Bottom Borough
52. Eagleswood Township
53. Long Beach Township
54. Little Egg Harbor Township
55. Tuckerton Borough
56. Beach Haven Borough
57. Port Republic City
58. Galloway Township
59. Absecon City
60. Brigantine City
61. Egg Harbor Township
62. Pleasantville City
63. Atlantic City
64. Northfield City
65. Ventnor City
66. Linwood City
67. Margate City
68. Somers Point City
69. Longport Borough
70. Estell Manor City
71. Corbin City
72. Ocean City
73. Upper Township
74. Woodbine Borough
75. Dennis Township
76. Sea Isle City
77. Avalon Borough
78. Middle Township
79. Stone Harbor Borough
80. North Wildwood City
81. West Wildwood Borough
82. Wildwood City
83. Wildwood Crest Borough
84. Lower Township
85. West Cape May Borough
86. Cape May City
87. Cape May Point Borough

New Jersey Shorefront Recreational Resources Study
New Jersey Department of Environmental Protection
New Jersey Department of Energy

This report was prepared under contract with the New Jersey Department of Environmental Protection, Division of Coastal Resources, Bureau of Coastal Planning and Development and the New Jersey Department of Energy, Coastal Energy Impact Program with the financial assistance of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management, under the provisions of the federal Coastal Zone Management Act, P.L. 92-481 as amended.

0 5 10 15 20 MILES

TOURISM REGIONS

- Non-Seasonal Suburban
- Resort Gambling
- North Shore Non-Seasonal/Rural
- South Shore Non-Seasonal/Rural
- North Shore Seasonal
- South Shore Seasonal

Figure 1. Study Area Municipalities

ROGERS, GOLDEN & HALPERN

CASE STUDY # 1
COAL-FIRED POWER PLANT IN LACEY TOWNSHIP

CASE STUDY #1
COAL-FIRED POWER PLANT IN LACEY TOWNSHIP

The Context: Lacey Township

The first case study assesses the social and economic impacts of a coal-fired power plant in Lacey Township. Lacey Township is located in Ocean County and is discussed in more detail in Appendix E, is the largest coastal county in the study area. Ocean County's population doubled in the 1960's and increased by 66 percent in the 1970's, making it the fastest growing county in the state. Even more dramatic is Lacey Township population increase in the last decade of almost 300 percent. Land use in the Township is primarily residential and rural, with industrial and commercial real property comprising only 10.3 percent of total assessed valuation. The Garden State Parkway passes through the township, providing excellent north-south access.

Lacey Township is classified as a north shore non-seasonal/rural community. The characteristics of municipalities in this classification are listed in Appendix E. Lacey Township's population density is .3 persons per acre. Only 19 percent of the housing is for primarily seasonal use. The measure of intensity of residential development reflects both the quality and density of dwelling units; it is derived from the assessed value of the homes and the ratio of the assessment to true market value. In Lacey Township this intensity is $6,675 per acre. The market value of a typical home in the township is $47,700. One of the township's major recreational attractions is the abundance of marina ships (approximately 1,000 of them) located along the western shore of Barnegat Bay.

Energy Facility: Coal-fired Power Plant

The energy facility used in this case study is a 500 megawatt coal-fired power plant with a total capital cost of $468.8 million to be constructed over a five year period. The facility would include a closed cooling system, minimizing the need for water from adjacent Barnegat Bay.

As shown in the facility environmental impact assessment matrix at the end of this appendix, activities during site preparation, construction, and operation of the plant can

affect numerous changes in the environment both because of ecologically and qualitatively. For example, faunal abundance may decrease the removal of surficial soils and vegetation during the site preparation phase. This activity may also generate a significant amount of dust that may detract from the appeal of Lacey Township to tourists.

The environmental changes are summarized and evaluated in the Schedule of Environmental Changes (I/O Table T8) located at the end of this appendix. Perceivable thresholds for the change categories are provided in section 2.4 of the User's Guide. As shown in the schedule, the likelihood of a category one change (loss of access to a recreational resource) is high due to the preemption of a significant amount of waterfront acreage. A loss in the quality or degree of recreational opportunity is expected to occur during the third, fourth, and fifth years of the construction period as a result of the decrease in faunal abundance and traffic congestion caused by construction activity during these years. (Note that water depth and shoreline changes in this category are considerd to be low or minimal because in most locations in the study area a coal-fired power plant would receive coal by rail, minimizing the dredging and channeling activities that could cause these changes.) Beginning in the third year of construciton there is a high probability of the lowering of visual and other aesthetic qualities. While the major structures of a coal-fired power plant are quite high and visible over a large area, the plant's inland location would limit its visibility to less than one mile of coean front. The corresponding probability of visual marring of the ocean front is listed in the schedule as low. Finally, it is assumed that tourists do not perceive the operation of a state-of-the-art coal-fired power plant as producing toxic substances, pathogens, or hazardous substances. Consequently, the probabilities of the introduciton of hazards and temporary loss of resources due to pollution are minimal.

Impact Path 1: Purchase of Construciton Materials and Equipment

I/O Table T3, Schedule of Project Requirements

The first Imput/Output table, T3, shows the total capital cost of $468.8 million divided by the fraction of construction completed for each year of the construction period. The number of manual and non-manual construction employees is listed for each year of the construciton period, as seen in Appendix B. For the remainder of the 11-year

analysis period, the annual operations labor force in the manual and non-manual categories appears as 90 and 12 person-years, respectively.

Impact Path 2: Construction and Operation Employment

I/O Table T4, Directly Employed Migrants

Input/Output Table T4 shows, by municipality and year, the number of directly employed migrants drawn to the region by employment opportunities at the plant over the 11-year planning period. The 29 municipalities presented in the table are those within the 30-minute commuting zone around Lacey Township. As can be seen, eight municipalities are receiving migrant employees, totaling 24 person-years, of employment over the five-year construction period. In the peak of construction, year three, 97 migrants will be broufht to the region. Case studies of existing facilities show the smaller labor force neded for the operations phase is typically locally supplied. Consequently, beginning with the sixth year of the analysis period (the first year of operation) the table shows no migrant labor will be contracted to the region by the facility. The remaining 10 percent is provided by immigrants. However, when this percentage amounts to less than .5 of one person-year it is rounded down and a zero appears.

I/O Table T5, Directly Employed Previous Residents

During peak construction of the plan, 73 percent of its manual laborers and 46 percent of its non-manual laborers are expected to be drawn from the working-age population of 117,318 currently residing within the commuting zone of Lacey Township. A presentation of these workers by municipality and year appears in I/O Table T5. During the construction period (the first five years of the analysis period) a fairly normal distribution exists, increasing substantially in the second year, peaking in the third, and tapering off during the fourth and fifth years. In the sixth through eleventh years, the relatively smaller operations labor force is constant. Dover, Brick, Lakewood, and Howell Townships lead the 44 municipalities with the largest numbers of previous residents employed. During the peak construction year, the third in the 5 year construction period, 171 Dover Township and 145 Brick Township person years of employment will be needed at the plant. During the construciton period 372 person-

years from Dover Township and 315 person-years from Brick Township will be required. During the six years of plant operation person-years of employment presented in table T5 17 will be supplied by Dover Township and 15 will come from Brick Township.

I/O Tables T6-A and T6-B, Unsupplied Family and Single Person Housing Demand

Input/Output Tables T6-A and T6-B present the unsupplied family and unsupplied single-person housing demand in each municipality within a 30-minute commuting zone around the facility. As discussed elsewhere, the abundance of second and seasonal homes on the New Jersey shorefront is sufficient to meet new housing demand of migrant employees in the foreseeable future. Consequently, many I/O tables T6-A and T6-B will show no housing demands of this type. In Case Study 1, family housing demand in municipalities with populations exceeding 15,000 with the commuting zone is 63 units in the peak construction year. Because this represents 0.08 percent of the total number of owner occupied housing, an excess housing demand cannot be said to exist, particularly given the effects on housing demands from normal housing unit turnover rates and the number of seasonally rented homes.

I/O Table T7, Facility Employee Income

Input/Output Table T7 presents the earnings of both resident and migrant employees for each year of the 11-year analysis period. For the 5-year construction period, the patern of increases and decreases in facility employee income from year to year corresponds directly to the change in the number of employees shown in I/O Tables T4 and T5. Consequently, the municipalities that are the recipients of the greatest amount of employee income are Dover and Brick Townships. In Dover Township, facility employee income peaks at $6.4 million in the third year and totals $13.9 million over the five-year construction period. In the operation phase, $497,000 of income is earned annually by Dover residents. To determine the increase earned by either the migrant or resident employee groups, divide the number found in the appropriate table (Table T4 for Directly Employed Migrants Brought to the Region and Table T5 for Directly Employed Previous Residents) for the municipality and year desired by the combined total of the two tables for the desired municipality and year desired. For example, to determine the facility employee income for migrant workers from Brick Township in the fourth year of construction, divide the number of Brick's migrants (8) for that year (found in Table T4)

by the total number of employees (71) (found by adding 8, the migrant contribution from Brick to 63, the number of Brick's directly employed previous residents in the fourth year of construction, found in Table T5). The result of this calculation is .11, which is multiplied by $2.353 million (the total facility income for Brick employees in the fourth year of construciton, found on Table T7). To determine the portion of total facility income earned by migrant employees from Brick Township in the fourth year of construction, or $265,126.62.

Impact Path 3: Tourist Response to Environmental Impacts

I/O Table T9, Tourism Diverted from Each Municipality

Input/Output Table T9 shows the number of tourists, in person days, diverted from the environmentally affected municipality which, in this case, is indicated as #43 Lacey Township. The 11 columns represent each year of the analysis period; the 20 rows corresponding to the 20 visitor types. These 20 types are keyed to the list of visitor group types found at the end of this appendix. Each visitor group type is denoted by a type of accommodation and activity. For example, the fifth row refers to the fifth visitor type, campground/shorefront recreation, which (in this case) will be diverted to other shorefront municipalities at the rate of 1,693 person-days in the first year, peaking at 10,141 person-days in the fifth year. Between 8,000 and 9,500 person-days of tourism will be lost during each successive year of operation. Category one of the 20 visitor types, seasonal home/shorefront recreation, incurs the greatest losses of the 20 categories, amounting to almost 59,000 person-days in year 4. Ninth through twelfth categories indicates no diversion of tourists because campsites do not exist in Lacey Township, so that no visitors are present in this accommodation group. It is useful to compare the total losses across all categories for a single year, (e.g., the peak year of construction) with the total number of visitors normally expected in the municipality. Information on total visitors can be found in the Inventory of Visitors in Chapters 2 and 3.3 of the text. In Case Study #1, the number diverted in year 3 is 239,464 visitor-days, 32.92 percent of the total annual visitor-days of 727,341.

I/O Table T10, Tourism Lost from Shorefront Study Area by Each Municipality

Input/Output Table T10 is similar to the previous table, yet differs by representing the tourism lost by the facility location from the entire shorefront region. The relative ranking of the 20 visitor groups is the same as if appeared in Table T9, although in the present table but these losses are considerably smaller. During the construction phase, less than 25 percent of the total person-days diverted in the campground/shorefront recreation category are lost from the shorefront region entirely. For example, in the fifth year of this analysis, 2,282 person-days are lost from the shorefront region entirely, as compared to 10,141 person-days that are diverted to other shorefront municipalities. Tourism loss from the shorefront is less than tourism diverted from the municipality because many visitors who respond to environmental change will merely move their recreational activities to a similarly equipped municipality nearby. Again, the first category losses are the greatest of the 20 categories. The number of (seasonal home/shorefront recreation) person-days lost from the region during the peak construction year (year 3) is 56,286 visitor-days, or 8 percent of the total annual visitor-days in the municipality.

I/O Table T11, Tourism Lost from Shorefront Study Area from All Municipalities

Because Case Study #1 encompasses a single municipality, Lacey Township, Table T11 is identical to Table T10. For analyses of facilities affecting more than one municipality, Table T11 totals the number of person-days lost from the shorefront study area by each municipality for each of the 20 visitor types across the 11 year period of the analysis.

Municipal Areas Analysis: Municipal Social and Economic Impacts

I/O Table T12, Fiscal Impact From Migration

Input/Output Table T12 presents the net result of the increased revenue provided to municipalities by migrants to the area and the costs to the municipalities of providing services to those additional people. Non-zero figures appear only in those rows corresponding to municipalities listed in I/O Table T4 as being recipients of migrants, and then only to the construciton phase, because no operations phase migrants are

expected in this case study. The table shows that he cost of providing municipal services outweighs increased revenues. In Dover Township the net cost peaks in the third year at $290,000 and then becomes negligible by the end of the construction period. Other municipalities that would show small, temporary net fiscal losses during construction include Howell, Brick and Wall Townships and the city of Lakewood.

I/O Table T13, Value Lost by Seasonal Home Owners

I/O Table T13 estimates the opportunity cost to seasonal home owners in Lacey Township who forego personal or rental use of their homes. In this instance, the greatest losses are experienced in the third year at $1.6 million. Subsequent years show losses of approximately $1.5 million each. In a township of 1,241 seasonal homes, third year losses average $1,324 per household.

I/O Table T14, Tourism Industry Final Demand Loss

I/O Table T14 shows the loss in final demand incurred by the industries and establishments in Lacey Township dependent on tourist trade over each year of the 11-year analysis period. Each of the eleven rows in the table corresponds to a different category of expenditure as listed at the end of this appendix. In the table, the greatest losses can be seen to occur in the fifth category, eating and drinking establishments, where beginning in the third year, losses construciton period amount to over $6 million. No amount appears in the last category, gambling, which is not applicable to Lacey Township.

Regional Area Analysis: Shorefront Social and Economic Impacts

I/O Table T15, Regional Expenditures for Material and Equipment

I/O Table T15 expresses in thousands of dollars the expenditure within the shorefront counties on required material and equipment, by economic sector, for each year of the construction phase. A coal-fired power plant is in the first of six groups of direct purchase profiles. The coal-fired plant and other facilities in the group require substantial quantities of general industrial machinery and equipment. The associated inputs have been determined to come from twenty five specific economic sectors in

fixed proportions for all of the facilities listed in the group. In I/O Table T15, the first column identifies the economic sector receiving expenditures. These numbers are keyed to the list of Water Resource Council Sectors at the end of this appendix. For example, the largest amount of expenditures within the region for a coal-fired power plant are made in sector #47, primary metal industries, in which $7.3 million is spent in the third year of construciton along. This represents 50 percent of the total $14.6 million spent on regional expenditures for mateials and equipment in year three, which in turn represents 6.8 percent of the total capital expenditure for that year for facility construction (see I/O Table T3). The regional expenditure for materials and equipment amount is small because it does not include wages, profits, or material and equipment purchases made outside of the shorefront region.

I/O Table T16, Tourism Industry Final Demand Loss

Tourism person-days lost by each municipality from the shroefront (i/O Table T10) has been converted to tourism industry final demand loss in dollars and presented in I/O Table T16. This loss is distributed across all of the affected water resource council economic sectors. In this case only five sectors are affected. Sector numbers appear in the first column with losses traced across the 11 years of this analysis. Sector #56, services, experiences the greatest loss, a total of $6.5 million over the analysis period. Sector #54, wholesale and retail trade losses $4.9 million over the same period. Total tourism industry final demand loss in the region was almost $1.7 million in year three, or 87 percent of all tourist trade lost (see third column in I/O Table T19) because most tourist expenditures are made for imported goods.

I/O Table T17, Final Demand Change for Shorefront Study Area

Facility employee income is also distributed across the Water Resource Council sectors. Input/Output Table T7 presents the same information in a more detailed form, consequently a separate table for facility employee income is not provided. The positive regional economic changes of Impact Paths 1 and 2 offset by the negative regional economic change of Impact Path 3 are presented in I/O Table T17. The economic sector numbers do not appear here. The 11 columns represent each year of the analysis period, the 56 rows correspond to each of the Water Resource Council economic sectors. Instances of no or negligible impact are represented by a zero. None of the sectors are

shown to experience a negative net effect at any point during the 11-year period. Positive effects are of varying magnitude, as in sector #55, finance, insurance, and real estate, for instance, where the final demand change reaches $6.5 million in the third year of construction and maintains a $486,000 demand change for each year of operation; in sector #12, agriculture and fishery serices, the effect is minimal and limited to the construction period.

I/O Table T18, Economic Activity Change for Shorefront Study Area

The next step in the analysis applies multipliers to each economic sector. Then, by adding up the fifty six rows in each column, the total change in economic activity in the shorefront area can be determined for each year of the eleven-year analysis period. In this case, the gross output is approximately 3 times the regional final demand change. I/O Table T18 indicates that there is an overall positive effect for the first four years, with the most substantial effect occurring in the second, third and fourth years of the construction period. The most considerable impact is reflected by the $117 million figure in the third year. Operation of the facility yields over $3 million annually. Over the eleven-year period total change comes to $271 million.

This measure of change in gross economic output for the four shorefront counties can be compared with the similar measure presented later, in I/O Table T20, for the state of New Jersey. Of course, the two estimates will vary somewhat because they are based upon two different approaches and systems of economic multipliers. Further, the state-level estimate is exepcted to be more accurate. However, comparison indicates that the two are close. The regional measure is 74 percent of the state measure, reflecting the greater provision of facility equipment and materials as opposed to tourist industry goods and services from areas of New Jersey outside of the shorefront counties.

State Area Analysis: New Jersey Social and Economic Impacts

I/O Table T19, Tourism Industry Final Demand Loss

At the state level, the loss of tourism from the shorefront region (I/O Table T10) is converted from person-days to dollars, and is presented in I/O Table T19. Each of the eleven rows corresponds to an expenditure category listed at the end of this appendix.

The numbers in the table represent the dollar loss, in thousands, of expenditures by all twenty visitor-group types in each category, for each of the eleven years. As in I/O Table T14 for the municipality, the greatest loss is sustained by category five, eating and drinking establishments. In the third year of construction the loss amounts to over $503 thousand and stays upwards of $400 thousand throughout the rest of the analysis period. Comparitively heavy losses also occur in the sixth, seventh and eighth categories--amusement and recreation, general retail trade, and groceries--with final demand losses in all three categories topping $900 thousand for the third through sixth years of the analysis period. In contrast, minimal losses are incurred in category two, automobile rental, and no losses occur in category four, campgrounds and trailer parks since these last do not exist in Lacey Township.

I/O Table T20, New Jersey Social and Economic Impacts

Overall social and economic change in New Jersey is depicted in I/O Table T20. The gross economic output, which corresponds to change in sales made by New Jersey firms, will be as high as $149 million during construction and will begin at $19 million during the first year of operation, growing slowly. This economic change is the net result of a tourism loss of $2.4 million in the third year (shown on the T20 for tourism impacts only) and gain due to facility construction expenditures of $152 million during that year (shown in the T20 for construction activities only).

Value added is considerably smaller than the gross economic output because it doesn't double count inputs. It is, thus, a truer measure of facility impact. In the third year, value added amounts to over $76 million. Throughout the operation phase it maintains a level clsoe to $11 million. This is the result of a $1.3 million third year loss due to lost tourist expenditures and an additional $1 million loss during each year of operation, offset by a $77 million peak construction year gain in the third year and a $12 gain due to facility operation.

Other measures of impact in that third year of activity include a change of employment for New Jersey of 2,720 jobs. This is the net change resulting from a loss of 74 person-years of employment in tourism related industries and a gain of 2,794 person-years of employment due to capital expenditures for construction (shown in the appropriate T20's). The average loss of employment in tourism industry-related firms

during the analysis period is 59 person-years. In the third year, New Jersey state taxes experience a net increase of $2.6 million with a tourism industry loss of $104 thousand and a facility related gain of $2.7 million. Local taxes provide a net $4.5 million in revenues, as a result of a $75 thousand loss from the tourism industry and a $4.6 million gain from construction activities.

The three tables identically titled I/O Table T20 are provided in this case study to illustrate alternative uses of the model. They are the result of applying model programs in a variety of ways to measure the net change and, separately, the positive and negative components of that change. The first I/O Table T20 presents the net change resulting from the complete case study analysis and is the major summary table. The next I/O Table T20 contains only the impact of tourist response to environmental change. It was developed by re-running P6-B and entering zero for facility activity levels. The third and final I/O Table T20 is developed by clearing I/O Table T19 and then repeating P6-B with full facility activity levels. It presents only facility purchase and employment impacts.

T3 SCHEDULE OF PROJECT REQUIREMENTS
FACILITY TYPE 10

ACTIVITY \ YEAR	1	2	3	4	5	6	7	8	9	10	11	TOTAL
FRACTION PER YEAR	0.0500	0.2600	0.4600	0.2000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.00
CAPITAL COST ($000)	23440	121888	215648	93760	14064	0	0	0	0	0	0	4688
EMPLOYMENT (PERSON-YEARS)												
CONSTRUCTION-												
MANUAL	133	694	1227	534	80	0	0	0	0	0	0	26
NON-MANUAL	15	76	134	58	9	0	0	0	0	0	0	2
ANN. OPERATION												
MANUAL	0	0	0	0	0	90	90	90	90	90	90	5
NON-MANUAL	0	0	0	0	0	12	12	12	12	12	12	

T4 Directly Employed Migrants Brought to Region, by municipality and year (in person-years)

0	0	0	0	0	0	0	0	0	0	0	1306	BELMAR
0	0	0	0	0	0	0	0	0	0	0	1308	BRIELLE
0	0	0	0	0	0	0	0	0	0	0	1314	FARMINGDALE
1	4	8	3	1	0	0	0	0	0	0	1319	HOWELL
0	0	0	0	0	0	0	0	0	0	0	1320	INTERLAKEN
0	0	0	0	0	0	0	0	0	0	0	1327	MANASQUAN
0	0	0	0	0	0	0	0	0	0	0	1344	SEA GIRT
0	0	0	0	0	0	0	0	0	0	0	1347	SOUTH BELMAR
0	0	0	0	0	0	0	0	0	0	0	1348	SPRING LAKE
0	0	0	0	0	0	0	0	0	0	0	1349	SPRING LAKE HEIGHTS
1	4	6	3	0	0	0	0	0	0	0	1352	WALL
0	0	0	0	0	0	0	0	0	0	0	1533	BARNEGAT
0	0	0	0	0	0	0	0	0	0	0	1501	BARNEGAT LIGHT
0	0	0	0	0	0	0	0	0	0	0	1502	BAY HEAD
0	0	0	0	0	0	0	0	0	0	0	1503	BEACH HAVEN
0	0	0	0	0	0	0	0	0	0	0	1504	BEACHWOOD
1	5	9	4	1	0	0	0	0	0	0	1505	BERKELEY
2	10	18	8	1	0	0	0	0	0	0	1506	BRICK
2	12	22	9	1	0	0	0	0	0	0	1507	DOVER
0	0	0	0	0	0	0	0	0	0	0	1508	EAGLESWOOD
0	0	0	0	0	0	0	0	0	0	0	1509	HARVEY CEDARS
0	0	0	0	0	0	0	0	0	0	0	1510	ISLAND HEIGHTS
0	0	0	0	0	0	0	0	0	0	0	1512	LACEY
0	0	0	0	0	0	0	0	0	0	0	1513	LAKEHURST
2	8	14	6	1	0	0	0	0	0	0	1514	LAKEWOOD
0	0	0	0	0	0	0	0	0	0	0	1515	LAVALLETTE
0	0	0	0	0	0	0	0	0	0	0	1516	LITTLE EGG HARBOR
0	0	0	0	0	0	0	0	0	0	0	1517	LONG BEACH
1	8	14	6	1	0	0	0	0	0	0	1518	MANCHESTER
0	0	0	0	0	0	0	0	0	0	0	1519	MANTOLOKING
0	0	0	0	0	0	0	0	0	0	0	1520	OCEAN
0	0	0	0	0	0	0	0	0	0	0	1521	OCEAN GATE
0	0	0	0	0	0	0	0	0	0	0	1522	PINE BEACH
1	4	6	3	0	0	0	0	0	0	0	1524	POINT PLEASANT
0	0	0	0	0	0	0	0	0	0	0	1525	POINT PLEASANT BEACH
0	0	0	0	0	0	0	0	0	0	0	1526	SEASIDE HEIGHTS
0	0	0	0	0	0	0	0	0	0	0	1527	SEASIDE PARK
0	0	0	0	0	0	0	0	0	0	0	1528	SHIP BOTTOM
0	0	0	0	0	0	0	0	0	0	0	1529	SOUTH TOMS RIVER
0	0	0	0	0	0	0	0	0	0	0	1530	STAFFORD
0	0	0	0	0	0	0	0	0	0	0	1531	SURF CITY
0	0	0	0	0	0	0	0	0	0	0	1532	TUCKERTON
0	0	0	0	0	0	0	0	0	0	0	0301	BASS RIVER
0	0	0	0	0	0	0	0	0	0	0	0336	WASHINGTON

T5 Directly Employed Previous Residents, by municipality and year (in person-years)

2	11	19	8	1	2	2	2	2	2	2	1306	BELMAR
1	6	11	5	1	1	1	1	1	1	1	1308	BRIELLE
0	2	4	2	0	0	0	0	0	0	0	1314	FARMINGDALE
8	39	69	30	5	7	7	7	7	7	7	1319	HOWELL
0	2	3	1	0	0	0	0	0	0	0	1320	INTERLAKEN
2	8	15	6	1	1	1	1	1	1	1	1327	MANASQUAN
1	4	7	3	0	1	1	1	1	1	1	1344	SEA GIRT
0	2	4	2	0	0	0	0	0	0	0	1347	SOUTH BELMAR
1	6	11	5	1	1	1	1	1	1	1	1348	SPRING LAKE
2	9	15	7	1	2	2	2	2	2	2	1349	SPRING LAKE HEIGHTS
6	30	52	23	3	5	5	5	5	5	5	1352	WALL
2	13	22	10	1	2	2	2	2	2	2	1533	BARNEGAT
0	1	2	1	0	0	0	0	0	0	0	1501	BARNEGAT LIGHT
0	2	4	2	0	0	0	0	0	0	0	1502	BAY HEAD
1	3	5	2	0	0	0	0	0	0	0	1503	BEACH HAVEN
2	12	21	9	1	2	2	2	2	2	2	1504	BEACHWOOD
5	28	49	21	3	5	5	5	5	5	5	1505	BERKELEY
16	82	145	63	9	15	15	15	15	15	15	1506	BRICK
19	97	171	74	11	17	17	17	17	17	17	1507	DOVER
0	2	3	1	0	0	0	0	0	0	0	1508	EAGLESWOOD
0	1	1	0	0	0	0	0	0	0	0	1509	HARVEY CEDARS
0	2	4	2	0	0	0	0	0	0	0	1510	ISLAND HEIGHTS
4	21	37	16	2	4	4	4	4	4	4	1512	LACEY
1	4	8	3	1	1	1	1	1	1	1	1513	LAKEHURST
10	50	89	39	6	9	9	9	9	9	9	1514	LAKEWOOD
1	3	6	2	0	1	1	1	1	1	1	1515	LAVALLETTE
3	13	23	10	2	2	2	2	2	2	2	1516	LITTLE EGG HARBOR
1	5	9	4	1	1	1	1	1	1	1	1517	LONG BEACH
5	26	45	20	3	5	5	5	5	5	5	1518	MANCHESTER
0	1	1	1	0	0	0	0	0	0	0	1519	MANTOLOKING
1	5	9	4	1	1	1	1	1	1	1	1520	OCEAN
0	2	4	2	0	0	0	0	0	0	0	1521	OCEAN GATE
1	3	5	2	0	0	0	0	0	0	0	1522	PINE BEACH
5	27	48	21	3	5	5	5	5	5	5	1524	POINT PLEASANT
2	8	15	6	1	1	1	1	1	1	1	1525	POINT PLEASANT BEACH
1	3	5	2	0	1	1	1	1	1	1	1526	SEASIDE HEIGHTS
1	3	5	2	0	0	0	0	0	0	0	1527	SEASIDE PARK
0	2	4	2	0	0	0	0	0	0	0	1528	SHIP BOTTOM
1	6	10	4	1	1	1	1	1	1	1	1529	SOUTH TOMS RIVER
3	16	29	12	2	3	3	3	3	3	3	1530	STAFFORD
0	2	4	2	0	0	0	0	0	0	0	1531	SURF CITY
1	4	7	3	0	1	1	1	1	1	1	1532	TUCKERTON
0	2	4	2	0	0	0	0	0	0	0	0301	BASS RIVER
0	1	2	1	0	0	0	0	0	0	0	0336	WASHINGTON

T7 Facility Employee Income, by municipality and year (in thousand dollars)

69	362	640	278	42	55	55	55	55	55	55	1306	BELMAR
41	212	375	163	25	32	32	32	32	32	32	1308	BRIELLE
15	79	139	61	9	12	12	12	12	12	12	1314	FARMINGDALE
277	1443	2550	1109	167	201	201	201	201	201	201	1319	HOWELL
11	56	99	43	6	9	9	9	9	9	9	1320	INTERLAKEN
54	281	496	216	32	42	42	42	42	42	42	1327	MANASQUAN
27	140	247	108	16	21	21	21	21	21	21	1344	SEA GIRT
16	82	145	63	10	12	12	12	12	12	12	1347	SOUTH BELMAR
40	209	369	161	24	32	32	32	32	32	32	1348	SPRING LAKE
55	284	502	219	33	43	43	43	43	43	43	1349	SPRING LAKE HEIGHTS
211	1100	1945	846	127	152	152	152	152	152	152	1352	WALL
82	425	751	327	49	64	64	64	64	64	64	1533	BARNEGAT
6	33	58	25	4	5	5	5	5	5	5	1501	BARNEGAT LIGHT
14	71	126	55	8	11	11	11	11	11	11	1502	BAY HEAD
17	88	156	68	10	13	13	13	13	13	13	1503	BEACH HAVEN
75	391	691	301	45	59	59	59	59	59	59	1504	BEACHWOOD
209	1090	1926	838	126	143	143	143	143	143	143	1505	BERKELEY
588	3060	5408	2353	354	420	420	420	420	420	420	1506	BRICK
695	3617	6393	2781	418	497	497	497	497	497	497	1507	DOVER
10	52	92	40	6	8	8	8	8	8	8	1508	EAGLESWOOD
4	19	34	15	2	3	3	3	3	3	3	1509	HARVEY CEDARS
16	82	145	63	9	12	12	12	12	12	12	1510	ISLAND HEIGHTS
133	695	1229	535	80	105	105	105	105	105	105	1512	LACEY
29	150	264	115	17	23	23	23	23	23	23	1513	LAKEHURST
370	1926	3405	1481	223	259	259	259	259	259	259	1514	LAKEWOOD
20	106	188	82	12	16	16	16	16	16	16	1515	LAVALLETTE
84	435	770	335	50	66	66	66	66	66	66	1516	LITTLE EGG HARBOR
33	173	305	133	20	26	26	26	26	26	26	1517	LONG BEACH
210	1094	1933	841	126	134	134	134	134	134	134	1518	MANCHESTER
5	24	42	18	3	4	4	4	4	4	4	1519	MANTOLOKING
34	178	314	137	20	27	27	27	27	27	27	1520	OCEAN
13	67	118	51	8	10	10	10	10	10	10	1521	OCEAN GATE
17	89	158	69	10	14	14	14	14	14	14	1522	PINE BEACH
196	1019	1801	783	118	139	139	139	139	139	139	1524	POINT PLEASANT
53	276	487	212	32	42	42	42	42	42	42	1525	POINT PLEASANT BEACH
19	98	173	75	11	15	15	15	15	15	15	1526	SEASIDE HEIGHTS
18	93	164	71	11	14	14	14	14	14	14	1527	SEASIDE PARK
14	74	130	57	9	11	11	11	11	11	11	1528	SHIP BOTTOM
37	191	338	147	22	29	29	29	29	29	29	1529	SOUTH TOMS RIVER
104	542	957	416	63	82	82	82	82	82	82	1530	STAFFORD
15	78	138	60	9	12	12	12	12	12	12	1531	SURF CITY
24	124	218	95	14	19	19	19	19	19	19	1532	TUCKERTON
13	68	119	52	8	10	10	10	10	10	10	0301	BASS RIVER
8	43	75	33	5	6	6	6	6	6	6	0336	WASHINGTON

T9 TOURISM DIVERTED FROM EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 43

10946	17185	55402	58966	58094	56718	55457	54254	53105	52006	50957
11467	16914	52268	55751	56345	55389	54486	53625	52797	52002	51238
7089	3722	27557	12914	12689	12121	11844	11580	11329	11090	10862
4952	7774	25063	26675	26281	25658	25088	24544	24024	23527	23052
1693	2055	10060	10091	10141	9459	8979	8607	8309	8070	7878
810	1026	4108	4135	4703	4618	4535	4460	4396	4342	4296
1272	491	6249	3791	3650	3225	3086	2979	2897	2833	2784
736	894	4374	4387	4409	4113	3904	3742	3613	3509	3425
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
2172	3397	10979	11670	11467	11145	10854	10578	10317	10070	9836
2331	3426	10624	11299	11424	11194	10978	10775	10581	10396	10220
1102	584	4290	2035	1994	1889	1839	1792	1747	1705	1666
1271	1988	6427	6831	6712	6524	6353	6192	6039	5895	5758
2594	3180	15463	15525	15576	14645	13955	13396	12930	12542	12218
809	1037	4101	4131	4693	4583	4497	4433	4378	4329	4287
265	94	1294	742	715	638	610	588	570	555	544
202	248	1205	1210	1214	1141	1087	1044	1008	977	952

T10 TOURISM LOST FROM SHOREFRONT STUDY AREA BY EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 43

3174	4984	13158	14004	13797	13801	13495	13202	12922	12655	12399
3325	4905	12414	13241	13382	13478	13258	13049	12847	12654	12468
2056	1079	6545	3067	3014	2949	2882	2818	2757	2698	2643
1436	2254	5952	6335	6242	6244	6105	5972	5846	5725	5609
491	596	2263	2270	2282	2144	2035	1951	1883	1829	1786
235	298	924	930	1058	1047	1028	1011	996	984	974
369	143	1406	853	821	731	699	675	657	642	631
213	259	984	987	992	932	885	848	819	795	776
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
630	985	2608	2772	2723	2712	2641	2574	2511	2450	2394
676	994	2523	2683	2713	2724	2671	2622	2575	2530	2487
320	169	1019	483	473	460	447	436	425	415	405
369	577	1526	1622	1594	1588	1546	1507	1470	1434	1401
752	922	3479	3493	3505	3319	3163	3036	2931	2843	2769
235	301	923	929	1056	1039	1019	1005	992	981	972
77	27	291	167	161	145	138	133	129	126	123
59	72	271	272	273	259	246	237	228	222	216

T11 TOTAL TOURISM LOSS FROM SHOREFRONT STUDY AREA FROM ALL MUNICIPALITIES, BY GROUP TYPE AND YEAR (IN PERSON-DAYS)

3174	4984	13158	14004	13797	13801	13495	13202	12922	12655	12399
3325	4905	12414	13241	13382	13478	13258	13049	12847	12654	12468
2056	1079	6545	3067	3014	2949	2882	2818	2757	2698	2643
1436	2254	5952	6335	6242	6244	6105	5972	5846	5725	5609
491	596	2263	2270	2282	2144	2035	1951	1883	1829	1786
235	298	924	930	1058	1047	1028	1011	996	984	974
369	143	1406	853	821	731	699	675	657	642	631
213	259	984	987	992	932	885	848	819	795	776
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
630	985	2608	2772	2723	2712	2641	2574	2511	2450	2394
676	994	2523	2683	2713	2724	2671	2622	2575	2530	2487
320	169	1019	483	473	460	447	436	425	415	405
369	577	1526	1622	1594	1588	1546	1507	1470	1434	1401
752	922	3479	3493	3505	3319	3163	3036	2931	2843	2769
235	301	923	929	1056	1039	1019	1005	992	981	972
77	27	291	167	161	145	138	133	129	126	123
59	72	271	272	273	259	246	237	228	222	216

T12 FISCAL IMPACT FROM MIGRATION, BY MUNICIPALITY AND YEAR (IN THOUSAND DOLLARS)

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1306	BELMAR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1308	BRIELLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1314	FARMINGDALE
-0.3	-1.0	-2.1	-0.8	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	1319	HOWELL
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1320	INTERLAKEN
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1327	MANASQUAN
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1344	SEA GIRT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1347	SOUTH BELMAR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1348	SPRING LAKE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1349	SPRING LAKE HEIGHTS
-0.0	-0.2	-0.3	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1352	WALL
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1533	BARNEGAT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1501	BARNEGAT LIGHT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1502	BAY HEAD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1503	BEACH HAVEN
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1504	BEACHWOOD
-0.1	-0.3	-0.5	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	1505	BERKELEY
-0.1	-0.4	-0.8	-0.3	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	1506	BRICK
-0.3	-1.6	-2.9	-1.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	1507	DOVER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1508	EAGLESWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1509	HARVEY CEDARS
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1510	ISLAND HEIGHTS
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1512	LACEY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1513	LAKEHURST
-0.3	-1.0	-1.8	-0.8	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	1514	LAKEWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1515	LAVALLETTE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1516	LITTLE EGG HARBOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1517	LONG BEACH
-0.1	-0.7	-1.2	-0.5	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	1518	MANCHESTER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1519	MANTOLOKING
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1520	OCEAN
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1521	OCEAN GATE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1522	PINE BEACH
-0.1	-0.3	-0.5	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1524	POINT PLEASANT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1525	POINT PLEASANT BEACH
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1526	SEASIDE HEIGHTS
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1527	SEASIDE PARK
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1528	SHIP BOTTOM
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1529	SOUTH TOMS RIVER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1530	STAFFORD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1531	SURF CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1532	TUCKERTON
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0301	BASS RIVER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0336	WASHINGTON

T13 VALUE LOST BY SEASONAL HOME OWNERS FOR EACH MUNICIPALITY, BY YEAR (IN THOUSAND DOLLARS) 43

353.3	467.5	1643.6	1582.3	1573.1	1537.0	1506.1	1476.6	1448.5	1421.5	1395.7

T14 TOURISM INDUSTRY FINAL DEMAND LOSS FOR EACH MUNICIPALITY, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

114	143	584	565	570	548	531	516	504	493	483
2	2	10	9	9	9	8	8	8	8	7
82	81	451	408	417	390	373	360	350	341	334
0	0	0	0	0	0	0	0	0	0	0
434	538	2162	2065	2076	1998	1940	1890	1846	1807	1772
278	356	1346	1295	1296	1255	1223	1195	1169	1145	1123
283	363	1373	1321	1322	1280	1248	1218	1192	1168	1145
313	412	1474	1419	1413	1377	1347	1319	1293	1268	1244
75	99	354	341	339	330	323	317	310	304	299
17	22	78	75	75	73	72	70	69	68	66
0	0	0	0	0	0	0	0	0	0	0

T15 REGIONAL EXPENDITURES FOR MATERIALS AND EQUIPMENT, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS) FACILITY # 10

3	1	5	9	4	1	0	0	0	0	0	0
12	2	9	15	7	1	0	0	0	0	0	0
14	0	1	2	1	0	0	0	0	0	0	0
18	8	40	71	31	5	0	0	0	0	0	0
19	59	307	543	236	35	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	3	17	30	13	2	0	0	0	0	0	0
38	7	36	64	28	4	0	0	0	0	0	0
40	7	36	64	28	4	0	0	0	0	0	0
41	7	34	60	26	4	0	0	0	0	0	0
42	1	7	13	6	1	0	0	0	0	0	0
43	65	336	594	258	39	0	0	0	0	0	0
44	22	112	198	86	13	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	120	622	1100	478	72	0	0	0	0	0	0
47	793	4125	7299	3173	476	0	0	0	0	0	0
48	17	87	155	67	10	0	0	0	0	0	0
49	108	561	992	431	65	0	0	0	0	0	0
50	63	327	579	252	38	0	0	0	0	0	0
51	0	1	2	1	0	0	0	0	0	0	0
52	0	1	2	1	0	0	0	0	0	0	0
53	65	340	601	261	39	0	0	0	0	0	0
54	103	538	952	414	62	0	0	0	0	0	0
55	39	205	363	158	24	0	0	0	0	0	0
56	93	484	857	372	56	0	0	0	0	0	0

T16 TOURISM INDUSTRY FINAL DEMAND LOSS, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS)

15	6	6	22	20	22	20	20	20	18	18	18
18	10	14	38	36	36	36	36	34	34	34	32
34	60	78	238	228	228	224	220	214	210	206	202
54	140	180	554	532	534	526	514	502	490	480	470
56	206	224	802	708	710	692	672	654	640	626	614

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T17, FINAL DEMAND CHANGE FOR SHOREFRONT STUDY AREA, BY SECTOR AND YEAR (IN THOUSAND DOLLARS)
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          1       5       9       4       1       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          2       9      15       7       1       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       1       2       1       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          8      40      71      31       5       0       0       0       0       0       0
        533    2774    4903    2133     320     346     346     346     346     346     346
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
         28     145     257     112      17      20      20      20      20      20      20
        176     917    1621     705     106     126     126     126     126     126     126
          0       0       0       0       0       0       0       0       0       0       0
          7      36      64      28       4       0       0       0       0       0       0
        167     870    1537     669     100     122     122     122     122     122     122
          7      36      64      28       4       0       0       0       0       0       0
          7      34      60      26       4       0       0       0       0       0       0
         30     157     278     121      18      21      21      21      21      21      21
        188     976    1724     750     113      90      90      90      90      90      90
         22     112     198      86      13       0       0       0       0       0       0
          0       0       0       0       0       0       0       0       0       0       0
        120     622    1100     478      72       0       0       0       0       0       0
        793    4125    7299    3173     476       0       0       0       0       0       0
         17      87     155      67      10       0       0       0       0       0       0
        108     561     992     431      65       0       0       0       0       0       0
         63     327     579     252      38       0       0       0       0       0       0
        179     933    1649     718     108     131     131     131     131     131     131
          0       1       2       1       0       0       0       0       0       0       0
        296    1540    2722    1184     178     169     169     169     169     169     169
         86     450     796     346      52      47      47      47      47      47      47
        704    3665    6477    2819     424     486     486     486     486     486     486
        628    3270    5780    2514     378     391     391     391     391     391     391
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T18 ECONOMIC ACTIVITY CHANGE FOR SHOREFRONT STUDY AREA, CHANGE IN GROSS OUTPUT, BY YEAR (IN THOUSAND DOLLARS)

12272	66774	116734	49385	5168	3267	3329	3396	3450	3499	3547

T19 TOURISM INDUSTRY FINAL DEMAND LOSS, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

33	41	135	131	132	129	125	122	119	116	114
1	1	2	2	2	2	2	2	2	2	2
24	24	101	92	94	88	85	82	79	77	76
0	0	0	0	0	0	0	0	0	0	0
126	156	503	481	483	473	460	448	438	429	420
81	103	316	304	304	301	293	286	280	274	269
82	105	322	310	310	307	299	292	286	280	275
91	119	349	336	335	334	326	320	313	307	302
22	29	84	81	80	80	78	77	75	74	73
5	6	19	18	18	18	17	17	17	16	16
18	8	60	31	30	28	27	27	26	26	25

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 10

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	-19	-23	-74	-70	-70	-69	-67	-65	-64	-62	-61
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	-609	-734	-2388	-2240	-2244	-2204	-2143	-2092	-2045	-2001	-1965
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	-237	-286	-927	-870	-871	-856	-833	-813	-795	-778	-764
VALUE ADDED (THOUSAND DOLLARS)	-343	-413	-1342	-1259	-1261	-1238	-1204	-1176	-1149	-1125	-1104
STATE TAXES (THOUSAND DOLLARS)	-26	-31	-104	-97	-97	-95	-93	-90	-88	-86	-85
LOCAL TAXES (THOUSAND DOLLARS)	-19	-23	-75	-70	-70	-69	-67	-66	-64	-63	-62

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 10

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	285	1558	2720	1146	113	155	157	158	160	161	162
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	15893	85124	149370	63771	7680	18963	19025	19075	19122	19166	19203
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	6177	33083	58054	24785	2986	3782	3806	3825	3844	3860	3875
VALUE ADDED (THOUSAND DOLLARS)	8079	43401	76102	32427	3804	10856	10890	10918	10945	10970	10990
STATE TAXES (THOUSAND DOLLARS)	272	1520	2638	1096	82	226	229	231	233	235	237
LOCAL TAXES (THOUSAND DOLLARS)	481	2577	4520	1928	230	411	413	414	416	417	418

CASE STUDY #2
SUPPORT BASE IN LACEY TOWNSHIP

CASE STUDY #2
SUPPORT BASE IN LACEY TOWNSHIP

The Context: Lacey Township

For the second case study, an assessment is made of the social and economic impacts of a support base in Lacey Township. Lacey Township is located in Ocean County which, as discussed in Appendix E, is the largest coastal county in the study area. In the county, population doubled in the 1960's and increased by 66 percent in the 1970's, making it the fastest growing county in the state. Lacey Township, itself, experienced a population increase in the last decade of almost 300 percent. Land use is primarily residential and rural, with industrial and commercial real property comprising only 10.3 percent of the township's total assessed valuation. The Garden State Parkway passes through the townships providing excellent north-south access.

Lacey Township is classified as a northern shore year-round and rural community. The characteristics of municipalities in this classification are listed in Appendix E. Specifically, in Lacey Township, the population density is .3 persons per acre. Only 19% of the housing is for primarily seasonal use. The measure of intensity of residential development reflects both the quality and density of dwelling units and is derived from the assessed value of the homes and the ratio of the assessment to true market value. In Lacey Township this intensity is $6,675 per acre. The market value of a typical home in the township is $47,700. One of the township's major recreational attractions is the abundance of marina slips (approximately 1,000 of them) located along the western shore of Barnegat Bay.

Energy Facility: Support Base

The "proposed" energy facility in this case study is assumed to have 20 berths for supply boats for use during the exploration phase of OCS development. It will become a permanent support base to support development and production activities once initial exploration is completed. The base will require approximately 1,400 feet of wharf along

the western shore of Barnegat Bay. Some dredging will be required along the bayfront to accomodate supply boats. The total capital cost is expected to be $30,000,000 over a construction period of one year.

As shown in the facility environmental impact assessment matrix, activities during site preparation, construction and operation of the facility can effect numerous changes in the environment, both ecologically and qualitatively. For example; dredging during the construction and operation phases can cause a variety of changes including an increase in groundwater discharge and salinity, a decrease in the shoreline protection capacity, and an increase in erosion. Consequent effects of these changes on recreational resources may detract from the appeal of Lacey Township to tourists.

The environmental changes are summarized and evaluated in the Schedule of Environmental Changes (I/O Table T8) located at the end of this appendix. Perceivable thresholds for the change categories are provided in section 2.4 of the User's Guide. As shown in the schedule, the likelihood of a category one change (loss of access to a recreational resource) is high due to the pre-emption of land for approximately 1,400 linear feet of wharf footage. Dredging during the construction year is expected to cause changes in water depth and in the shoreline, resulting in a loss in quality or degree of recreational opportunity. Periodic maintenance dredging, assmed to be required every five years, is not expected to result in a quality loss. Similarly, a lowering of visual quality is expected to occur only in the construction year. The onsite storage of drilling muds, lubricants, solvents and other materials which are required to support offshore drilling operations is likely to be perceived as an introduction of a hazard to health, safety, or the environment throughout the operation phase.

Impact Path 1: Purchase of Construction Materials and Equipment

I/O Table T3, Schedule of Project Requirements

In the case of the suppport base, the construction period is one year, and the total amount appears under the first year. The construction labor force consists of 34 manual workers and 13 non-manual workers. For operations, 93 manual and 7 non-manual workers are required annually.

Impact Path 2: Construction and Operation Employment

I/O Table T4, Directly Employed Migrants

As shown in the table, no migrants are expected in any of the forty four municipalities comprising the 30-minute commuting zone. This is due to the short duration of the construction period, and the relatively small labor force requirements which can be met locally. Approximately five person-years of labor will be supplied by persons commuting long distance and migrants to the construction area, but this migration results in a probability of less than half a person-year in any municipality.

I/O Table T5, Directly Employed Previous Residents

Within the commuting zone, the 211,465 previous resident population of working age people is expected to contribute 90 percent of the manual and non-manual laborers during construction. This is the maximum proportion allowed by the model. Brick and Dover are expected to contribute the most with 6 and 7 employees, respectively. Lakewood is third with 4 workers supplied. While the support base is unusual in that its operations labor force is greater than its construction force, the assumption that operations workers are locally supplied is also reasonable in this instance. Again, Brick and Dover will supply the greatest number of workers, with 14 and 17, respectively. Lakewood is third with 9.

I/O Tables T6-A and T6-B, Unsupplied Family and Single Person Housing Demand

Unmet housing demand is unlikely to occur in the shorefront study area in the foreseeable future. This is especially true for the short construction period of a support base during which less than half a person-year of migrants are expected within any single municipality. The I/O Tables T6-A and T6-B contain all zeros in this case study.

I/O Table T7, Facility Employee Income

Facility employee income in each municipality corresponds directly to the number of workers supplied. Therefore, Brick, Dover, and Lakewood are the recipients of the greatest amounts of income. In the construction period this comes to $203, $240 and

$126 thousand, respectively. Annual operations earnings are almost double at $412, $487 and $253 thousand apiece. The case study used 1982 wage levels to represent current wages. Percentage change in the wage index (provided by BLS) was entered as zero. During future years, the percentage change between 1982 and that year wages can be entered to inflate wages presented in this table.

Impact Path 3: Tourist Response to Environmental Impacts

I/O Table T9, Tourism Diverted from Each Municipality

This table shows the number of tourists, in person-days, diverted from the environmentally affected municipality, #43, Lacey Township, to other shorefront municipalities. The eleven columns represent each year of the eleven-year analysis period, and the twenty rows correspond to the twenty visitor group types listed at the end of this appendix. The first visitor category, seasonal home/shorefront recreation is expected to incur the highest diversion rate, peaking with almost 62 thousand person-days lost in the second year (the first year of operation) and staying upwards of 40 thousand for the next seven years, before dropping back to about 38 thousand person-days per year. Exhibiting a similar pattern, except for smaller second year losses, is the category two visitor group, seasonal home/bay-water recreation. The presence of zeros in the ninth through twelfth rows indicates the absence of campsites in Lacey Township and zero values for those visitor groups in the campsite accomodation categories. Third year losses (representing a typical operation year) add up to 186, 117 visitor-days or 25.59 percent of the 727,341 annual visitor-days usually spent in the township.

I/O Table T10, Tourism Lost from Shorefront Study Area by Each Municipality

Figures in this table represent the loss of tourism, in person days, by Lacey Township from the entire shorefront region. As can be seen, the relative ranking of the twenty visitor groups is the same, but the numbers are considerably smaller, amounting to about one-fourth of the number of tourists diverted. In the seasonal home/shorefront recreation category, the number of person days lost in the second year is 18 thousand, decreasing to 14 thousand by the third year and then more gradually to over 11 thousand

by the end of the analysis period. The total number of person-days lost across the twenty visitor categories in the third year amounts to 48,463. This represents 7 percent of the total visitors in the municipality annually.

I/O Table T11, Tourism Lost from Shorefront Study Area from All Municipalities

In this case study, I/O Table T11 is identical to I/O Table T10 because only one municipality is affected and, therefore, only one T10 is produced. If the environmental effects had covered a broader area, additional tables would have been generated for each affected municipality, and I/O Table T11 would have added up the tallies for all twenty visitor types across the eleven-year period.

Municipal Area Analysis: Municipal Social and Economic Impacts

I/O Table T12, Fiscal Impact from Migration

This table presents the net result of the increased revenue provided to municipalities by migrants to the area and the costs to the municipalities of providing services to those additional people. Since there are no migrants expected in this case study, I/O Table T12 yields all zeros.

I/O Table T13, Value Lost by Seasonal Home Owners

This table estimates the opportunity cost to seasonal homeowners in Lacey Township who forego personal use or rental use of their homes. In this instance, the greatest losses are experienced in the second year of the analysis period (the first year of facility operation) at $1.6 million. In subsequent years the loss levels off to approximately $1.2 million. In a township of 1,241 seasonal homes, second year losses average $1,289 per household.

I/O Table T14, Tourism Industry Final Deman Loss

I/O Table T14 shows the loss in final demand incurred by the industries and establishments in Lacey Township dependent on the tourist trade, over each year of the eleven-year period. The eleven rows in the table correspond to a different category of

expenditure as listed at the end of this appendix. The greatest losses can be seen to occur in the fifth category, eating and drinking establishments, peaking at $1.9 million in the second year. Zeros appear in the fourth category, campgrounds and trailer parks, and the last category, gambling, because these categories are not applicable to Lacey Township. Total losses in the construction year add up to $5.6 million which is 24 percent of the $23 million annual expenditure by tourists in the municipality.

Regional Area Analysis: Shorefront Social and Economic Impacts

I/O Table T15, Regional Expenditures for Material and Equipment

The first column in the table are the WRC economic sector numbers listed at the end of this appendix. The remaining eleven columns of the twenty-six rows express, in thousand dollars, the expenditure on required material and equipment, by economic sector, during the construction phase. For the suport base, the largest expenditure is in sector #46, stone, clay and glass products, where the $2.2 million spent accounts for 56 percent of the total $3.9 million expenditure for that year and, in this case, the entire construction phase. The total $3.9 million expenditure is only 13 percent of the total capital cost of $30 million (see I/O Table T3) because it does not include wages, profits, or material and equipment purchases made outside of the shorefront region.

I/O Table T16, Tourism Industry Final Demand Loss

Tourism person-days lost by each municipality from the shorefront (I/O Table T10) are converted to tourism industry final demand loss in dollars and presented in I/O Table T16. In this case, only the five sectors whose numbers appear in the lefthand column experience losses which are traced across eleven years. Sector #56, services, incurs losses of $361 thousand in the second year with an eleven year total of $3 million (arrived at by adding across the row). Sector #54, wholesale and retail trade suffers substantial losses, as well, peaking in the second year with $278 thousand, with a total of $2.3 million across the eleven year period.

I/O Table T17, Final Demand Change for Shorefront Study Area

Facility employee income is also distributed across the WRC sectors though a separate table is not printed out since I/O Table T7 presents the same information in a more detailed form. The positive regional economic changes of Impact Paths 1 and 2 offset by the negative regional change of Impact Path 3 are presented in I/O Table T17. This time, the economic sector numbers are omitted and there are eleven columns of numbers representing each year of the analysis period. There are fifty six rows corresponding to all fifty six WRC economic sectors. Zeros appear where there is no impact or net effect. In the table, four sectors, #'s 15, 18, 34, 54, are shown to exhibit negative effects. They are oil and gas extraction, general building, other food products, and wholesale and retail trade, respectively. Twenty-five other sectors show a net gain in final demand. Sector #46, stone, clay and glass products, shows the greatest increase in any single year with $2.2 million in year one.

I/O Table T18, Economic Activity Change for Shorefront Study Area

In the regional area analysis, after the multipliers are applied in each economic sector and the fifty six rows in each column are added up to show the total economic change in the shorefront region for each year of the analysis period. I/O Table T18 indicates that there is an overall positive effect each year, peaking during the construction year at $13 million and climbing up from $3 to $4 million during the operations phase. The regional economic activity change accounts for 83 percent of the state economic activity change during the construction year, and 25 percent of the state change during operations (see gross economic output in I/O Table T20).

State Area Analysis: New Jersey Social and Economic Impacts

I/O Table T19, Tourism Industry Final Demand Loss

At the state level, the loss of tourism from the shorefront region (I/O Table T10) is converted from person-days to dollars, and is presented in I/O Table T19. Each of the eleven rows corresponds to a expenditure category listed at the end of this appendix. The numbers represent the dollar loss, in thousands, of expenditures by all twenty visitor-group types in each category, for each of the eleven years. As in I/O Table T14

for the municipality, the greatest loss is sustained by category five, eating and drinking establishments. In the second year this loss amounts to $488 thousand and stays upwards of $350 thousand for the next four years, tapering off to $300 thousand by the end of the analysis period. Comparatively heavy losses also occur in the sixth, seventh and eighth categories--amusement and recreation, general retail trade, and groceries, respectively. Zero losses occur in category four, campgrounds and trailer parks, since these do not exist in Lacey Township. Losses in category two, automobile rental are, also, quite minimal.

I/O Table T20, New Jersey Social and Economic Impacts

Overall social and economic change in New Jersey is depicted in I/O Table T20. The change in gross economic output peaks at $15.6 million in the first year (the construction year), dropping to $13.5 million at the beginning of operations and slowly climbing to $14.3 million by the end of the analysis period. These overall impacts are the result of the roughly $1.5 to $2 million in tourism loss for each year of the analysis period (shown on the T20 for the tourism loss only), and the $17.4 million impetus from construction and $15.8 million impetus from annual operations (shown on the T20 for construction and operation activities only).

In the construction year value added peaks at $6.8 million. In the first operation year, it drops back to $6.25 million but then climbs steadily to $6.7 million by the end of the analysis period. Considering tourism loss alone, value added amounts to just under $1 million during the construction of the support base, increases to $1.3 million in the first year of operation, and then declines gradually to $821 thousand by the end of the eleven-year period. Isolating construction and employment effects, it can be seen that value added comes to $7.8 million during the construction year, and maintains a level of $7.6 million throughout the operations phase.

The net change in employment averages 191.5 person-years over the eleven-year period with a peak increase of 211 person-years in the construction phase. Considering facility construction and operation alone, 266 person-years of employment are expected to be generated in the first year, with 243 person-years generated during each operation year. This is offset by the average loss of 53.5 person-years of employment due to tourism loss. Peak losses occur in the second year (first year of operation) with 72

person-years of employment eliminated. State taxes are expected to show a net average gain of $173.5 thousand per year, while local taxes show a $359 thousand yearly average increase in revenues.

T3 SCHEDULE OF PROJECT REQUIREMENTS
FACILITY TYPE 1

ACTIVITY \ YEAR	1	2	3	4	5	6	7	8	9	10	11	TOTALS
FRACTION PER YEAR	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
CAPITAL COST ($000)	30000	0	0	0	0	0	0	0	0	0	0	30000
EMPLOYMENT (PERSON-YEARS)												
CONSTRUCTION-												
MANUAL	34	0	0	0	0	0	0	0	0	0	0	34
NON-MANUAL	13	0	0	0	0	0	0	0	0	0	0	13
ANN. OPERATION												
MANUAL	0	93	93	93	93	93	93	93	93	93	93	930
NON-MANUAL	0	7	7	7	7	7	7	7	7	7	7	70

T5 Directly Employed Previous Residents, by municipality and year (in person-years)

1	2	2	2	2	2	2	2	2	2	2	1306	BELMAR
0	1	1	1	1	1	1	1	1	1	1	1308	BRIELLE
0	0	0	0	0	0	0	0	0	0	0	1314	FARMINGDALE
3	7	7	7	7	7	7	7	7	7	7	1319	HOWELL
0	0	0	0	0	0	0	0	0	0	0	1320	INTERLAKEN
1	1	1	1	1	1	1	1	1	1	1	1327	MANASQUAN
0	1	1	1	1	1	1	1	1	1	1	1344	SEA GIRT
0	0	0	0	0	0	0	0	0	0	0	1347	SOUTH BELMAR
0	1	1	1	1	1	1	1	1	1	1	1348	SPRING LAKE
1	1	1	1	1	1	1	1	1	1	1	1349	SPRING LAKE HEIGHTS
2	5	5	5	5	5	5	5	5	5	5	1352	WALL
1	2	2	2	2	2	2	2	2	2	2	1533	BARNEGAT
0	0	0	0	0	0	0	0	0	0	0	1501	BARNEGAT LIGHT
0	0	0	0	0	0	0	0	0	0	0	1502	BAY HEAD
0	0	0	0	0	0	0	0	0	0	0	1503	BEACH HAVEN
1	2	2	2	2	2	2	2	2	2	2	1504	BEACHWOOD
2	5	5	5	5	5	5	5	5	5	5	1505	BERKELEY
6	14	14	14	14	14	14	14	14	14	14	1506	BRICK
7	17	17	17	17	17	17	17	17	17	17	1507	DOVER
0	0	0	0	0	0	0	0	0	0	0	1508	EAGLESWOOD
0	0	0	0	0	0	0	0	0	0	0	1509	HARVEY CEDARS
0	0	0	0	0	0	0	0	0	0	0	1510	ISLAND HEIGHTS
2	4	4	4	4	4	4	4	4	4	4	1512	LACEY
0	1	1	1	1	1	1	1	1	1	1	1513	LAKEHURST
4	9	9	9	9	9	9	9	9	9	9	1514	LAKEWOOD
0	1	1	1	1	1	1	1	1	1	1	1515	LAVALLETTE
1	2	2	2	2	2	2	2	2	2	2	1516	LITTLE EGG HARBOR
0	1	1	1	1	1	1	1	1	1	1	1517	LONG BEACH
2	4	4	4	4	4	4	4	4	4	4	1518	MANCHESTER
0	0	0	0	0	0	0	0	0	0	0	1519	MANTOLOKING
0	1	1	1	1	1	1	1	1	1	1	1520	OCEAN
0	0	0	0	0	0	0	0	0	0	0	1521	OCEAN GATE
0	0	0	0	0	0	0	0	0	0	0	1522	PINE BEACH
2	5	5	5	5	5	5	5	5	5	5	1524	POINT PLEASANT
1	1	1	1	1	1	1	1	1	1	1	1525	POINT PLEASANT BEACH
0	1	1	1	1	1	1	1	1	1	1	1526	SEASIDE HEIGHTS
0	0	0	0	0	0	0	0	0	0	0	1527	SEASIDE PARK
0	0	0	0	0	0	0	0	0	0	0	1528	SHIP BOTTOM
0	1	1	1	1	1	1	1	1	1	1	1529	SOUTH TOMS RIVER
1	3	3	3	3	3	3	3	3	3	3	1530	STAFFORD
0	0	0	0	0	0	0	0	0	0	0	1531	SURF CITY
0	1	1	1	1	1	1	1	1	1	1	1532	TUCKERTON
0	0	0	0	0	0	0	0	0	0	0	0301	BASS RIVER
0	0	0	0	0	0	0	0	0	0	0	0336	WASHINGTON

T7 Facility Employee Income, by municipality and year (in thousand dollars)

26	54	54	54	54	54	54	54	54	54	54	1306	BELMAR
15	32	32	32	32	32	32	32	32	32	32	1308	BRIELLE
6	12	12	12	12	12	12	12	12	12	12	1314	FARMINGDALE
97	197	197	197	197	197	197	197	197	197	197	1319	HOWELL
4	8	8	8	8	8	8	8	8	8	8	1320	INTERLAKEN
20	42	42	42	42	42	42	42	42	42	42	1327	MANASQUAN
10	21	21	21	21	21	21	21	21	21	21	1344	SEA GIRT
6	12	12	12	12	12	12	12	12	12	12	1347	SOUTH BELMAR
15	31	31	31	31	31	31	31	31	31	31	1348	SPRING LAKE
20	42	42	42	42	42	42	42	42	42	42	1349	SPRING LAKE HEIGHTS
73	149	149	149	149	149	149	149	149	149	149	1352	WALL
30	63	63	63	63	63	63	63	63	63	63	1533	BARNEGAT
2	5	5	5	5	5	5	5	5	5	5	1501	BARNEGAT LIGHT
5	11	11	11	11	11	11	11	11	11	11	1502	BAY HEAD
6	13	13	13	13	13	13	13	13	13	13	1503	BEACH HAVEN
28	58	58	58	58	58	58	58	58	58	58	1504	BEACHWOOD
70	140	140	140	140	140	140	140	140	140	140	1505	BERKELEY
203	412	412	412	412	412	412	412	412	412	412	1506	BRICK
240	487	487	487	487	487	487	487	487	487	487	1507	DOVER
4	8	8	8	8	8	8	8	8	8	8	1508	EAGLESWOOD
1	3	3	3	3	3	3	3	3	3	3	1509	HARVEY CEDARS
6	12	12	12	12	12	12	12	12	12	12	1510	ISLAND HEIGHTS
49	104	104	104	104	104	104	104	104	104	104	1512	LACEY
11	22	22	22	22	22	22	22	22	22	22	1513	LAKEHURST
126	253	253	253	253	253	253	253	253	253	253	1514	LAKEWOOD
8	16	16	16	16	16	16	16	16	16	16	1515	LAVALLETTE
31	65	65	65	65	65	65	65	65	65	65	1516	LITTLE EGG HARBOR
12	26	26	26	26	26	26	26	26	26	26	1517	LONG BEACH
67	130	130	130	130	130	130	130	130	130	130	1518	MANCHESTER
2	4	4	4	4	4	4	4	4	4	4	1519	MANTOLOKING
13	27	27	27	27	27	27	27	27	27	27	1520	OCEAN
5	10	10	10	10	10	10	10	10	10	10	1521	OCEAN GATE
6	13	13	13	13	13	13	13	13	13	13	1522	PINE BEACH
67	137	137	137	137	137	137	137	137	137	137	1524	POINT PLEASANT
20	41	41	41	41	41	41	41	41	41	41	1525	POINT PLEASANT BEACH
7	15	15	15	15	15	15	15	15	15	15	1526	SEASIDE HEIGHTS
7	14	14	14	14	14	14	14	14	14	14	1527	SEASIDE PARK
5	11	11	11	11	11	11	11	11	11	11	1528	SHIP BOTTOM
14	29	29	29	29	29	29	29	29	29	29	1529	SOUTH TOMS RIVER
39	81	81	81	81	81	81	81	81	81	81	1530	STAFFORD
6	12	12	12	12	12	12	12	12	12	12	1531	SURF CITY
9	18	18	18	18	18	18	18	18	18	18	1532	TUCKERTON
5	10	10	10	10	10	10	10	10	10	10	0301	BASS RIVER
3	6	6	6	6	6	6	6	6	6	6	0336	WASHINGTON

T9 TOURISM DIVERTED FROM EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 43

37215	61952	48205	46722	45309	43961	42677	41453	40285	39173	38112
37841	47347	46133	44863	43650	42489	41379	40318	39303	38332	37404
23038	16791	14247	13873	13518	13179	12856	12549	12255	11976	11709
16835	28026	24120	23431	22773	22146	21548	20977	20433	19913	19417
7012	7798	5898	5309	4857	4506	4233	4022	3858	3731	3632
2926	2653	2285	2054	1872	1729	1617	1527	1457	1402	1358
4880	2718	2063	1882	1744	1639	1559	1497	1450	1414	1386
3049	3390	2564	2308	2112	1959	1841	1749	1678	1622	1579
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
7384	12232	10486	10131	9795	9478	9179	8896	8629	8376	8137
7692	9582	8990	8683	8393	8118	7858	7612	7379	7158	6948
3581	2609	2210	2141	2077	2016	1959	1905	1854	1806	1760
4323	7160	6138	5930	5734	5548	5373	5207	5051	4903	4763
10748	12175	9266	8424	7745	7195	6749	6387	6094	5856	5662
2923	2700	2365	2149	1972	1827	1707	1609	1528	1462	1407
1016	564	425	390	363	340	322	308	296	287	280
838	949	722	656	604	561	526	498	475	456	441

T10 TOURISM LOST FROM SHOREFRONT STUDY AREA BY EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 43

9676	18276	14221	13783	13366	12969	12590	12229	11884	11556	11243
9839	10653	10380	10094	9821	9560	9310	9072	8843	8625	8416
5990	4366	3704	3607	3515	3427	3343	3263	3186	3114	3044
4377	7287	6271	6092	5921	5758	5602	5454	5312	5177	5048
1426	2028	1534	1380	1263	1171	1101	1046	1003	970	944
595	690	594	534	487	450	420	397	379	364	353
992	707	536	489	454	426	405	389	377	368	360
620	882	667	600	549	509	479	455	436	422	411
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
1920	3180	2726	2634	2547	2464	2387	2313	2243	2178	2116
2000	2491	2337	2258	2182	2111	2043	1979	1918	1861	1807
931	678	574	557	540	524	509	495	482	470	458
1124	1862	1596	1542	1491	1443	1397	1354	1313	1275	1238
2186	3166	2409	2190	2014	1871	1755	1661	1584	1522	1472
594	702	615	559	513	475	444	418	397	380	366
207	147	111	102	94	88	84	80	77	75	73
170	247	188	171	157	146	137	129	123	119	115

TII TOTAL TOURISM LOSS FROM SHOREFRONT STUDY AREA FROM ALL MUNICIPALITIES, BY GROUP TYPE AND YEAR (IN PERSON-DAYS)

9676	18276	14221	13783	13366	12969	12590	12229	11884	11556	11243
9839	10653	10380	10094	9821	9560	9310	9072	8843	8625	8416
5990	4366	3704	3607	3515	3427	3343	3263	3186	3114	3044
4377	7287	6271	6092	5921	5758	5602	5454	5312	5177	5048
1426	2028	1534	1380	1263	1171	1101	1046	1003	970	944
595	690	594	534	487	450	420	397	379	364	353
992	707	536	489	454	426	405	389	377	368	360
620	882	667	600	549	509	479	455	436	422	411
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
1920	3180	2726	2634	2547	2464	2387	2313	2243	2178	2116
2000	2491	2337	2258	2182	2111	2043	1979	1918	1861	1807
931	678	574	557	540	524	509	495	482	470	458
1124	1862	1596	1542	1491	1443	1397	1354	1313	1275	1238
2186	3166	2409	2190	2014	1871	1755	1661	1584	1522	1472
594	702	615	559	513	475	444	418	397	380	366
207	147	111	102	94	88	84	80	77	75	73
170	247	188	171	157	146	137	129	123	119	115

T13 VALUE LOST BY SEASONAL HOME OWNERS FOR EACH MUNICIPALITY, BY YEAR (IN THOUSAND DOLLARS) 43

1178.5	1580.3	1360.8	1321.6	1284.3	1248.7	1214.7	1182.3	1151.3	1121.7	1093.5

T14 TOURISM INDUSTRY FINAL DEMAND LOSS FOR EACH MUNICIPALITY, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

415	496	411	389	370	353	339	327	316	306	298
7	7	5	5	4	4	4	4	3	3	3
325	301	233	210	193	179	168	160	154	149	145
0	0	0	0	0	0	0	0	0	0	0
1545	1862	1559	1483	1417	1361	1311	1267	1227	1192	1160
962	1219	1035	993	956	923	892	865	840	816	795
981	1243	1055	1013	975	941	910	882	856	832	811
1056	1395	1199	1161	1125	1092	1060	1081	1003	977	952
253	336	290	280	272	264	256	249	243	236	230
56	75	65	63	61	59	58	56	55	53	52
0	0	0	0	0	0	0	0	0	0	0

T15 REGIONAL EXPENDITURES FOR MATERIALS AND EQUIPMENT, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS) FACILITY # 1

3	36	0	0	0	0	0	0	0	0	0	0
12	23	0	0	0	0	0	0	0	0	0	0
16	69	0	0	0	0	0	0	0	0	0	0
18	42	0	0	0	0	0	0	0	0	0	0
19	3	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	4	0	0	0	0	0	0	0	0	0	0
38	169	0	0	0	0	0	0	0	0	0	0
39	7	0	0	0	0	0	0	0	0	0	0
40	5	0	0	0	0	0	0	0	0	0	0
41	4	0	0	0	0	0	0	0	0	0	0
42	18	0	0	0	0	0	0	0	0	0	0
43	167	0	0	0	0	0	0	0	0	0	0
44	29	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	2193	0	0	0	0	0	0	0	0	0	0
47	244	0	0	0	0	0	0	0	0	0	0
48	63	0	0	0	0	0	0	0	0	0	0
49	153	0	0	0	0	0	0	0	0	0	0
50	52	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0
52	6	0	0	0	0	0	0	0	0	0	0
53	88	0	0	0	0	0	0	0	0	0	0
54	273	0	0	0	0	0	0	0	0	0	0
55	34	0	0	0	0	0	0	0	0	0	0
56	232	0	0	0	0	0	0	0	0	0	0

T16 TOURISM INDUSTRY FINAL DEMAND LOSS, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS)

15	8	10	9	8	8	7	7	7	7	6	6
18	15	20	17	17	16	16	15	15	14	14	14
34	89	119	101	96	93	90	87	84	82	79	77
54	208	278	234	224	216	208	201	195	189	184	179
56	298	361	299	284	271	260	251	242	235	228	222

```
T17  FINAL DEMAND CHANGE FOR SHOREFRONT STUDY AREA, BY SECTOR AND YEAR (IN THOUSAND DOLLARS)
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
     36      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
     23      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
     -8    -10     -9     -8     -8     -7     -7     -7     -7     -6     -
     69      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
     27    -20    -17    -17    -16    -16    -15    -15    -14    -14    -1
    170    340    340    340    340    340    340    340    340    340    34
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
    -89   -119   -101    -96    -93    -90    -87    -84    -82    -79    -7
     10     20     20     20     20     20     20     20     20     20
     65    124    124    124    124    124    124    124    124    124    1
      0      0      0      0      0      0      0      0      0      0
    169      0      0      0      0      0      0      0      0      0
     66    120    120    120    120    120    120    120    120    120    1
      5      0      0      0      0      0      0      0      0      0
      4      0      0      0      0      0      0      0      0      0
     28     21     21     21     21     21     21     21     21     21
    210     88     88     88     88     88     88     88     88     88
     29      0      0      0      0      0      0      0      0      0
      0      0      0      0      0      0      0      0      0      0
   2193      0      0      0      0      0      0      0      0      0
    244      0      0      0      0      0      0      0      0      0
     63      0      0      0      0      0      0      0      0      0
    153      0      0      0      0      0      0      0      0      0
     52      0      0      0      0      0      0      0      0      0
     63    128    128    128    128    128    128    128    128    128    1
      6      0      0      0      0      0      0      0      0      0
    169    165    165    165    165    165    165    165    165    165    1
   -128   -232   -188   -178   -170   -162   -155   -149   -143   -138    -1
    268    477    477    477    477    477    477    477    477    477    4
    122     23     85    100    113    124    133    142    149    156    1
```

T18 ECONOMIC ACTIVITY CHANGE FOR SHOREFRONT STUDY AREA, CHANGE IN GROSS OUTPUT, BY YEAR (IN THOUSAND DOLLARS)

13044	3024	3468	3575	3662	3741	3810	3873	3929	3983	4028

T12 TOURISM INDUSTRY FINAL DEMAND LOSS, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

96	130	107	101	96	92	88	85	82	80	77
1	2	1	1	1	1	1	1	1	1	1
66	78	61	55	50	46	44	42	40	39	38
0	0	0	0	0	0	0	0	0	0	0
368	488	406	386	369	354	341	330	319	310	302
238	320	269	259	249	240	232	225	218	212	207
242	326	275	264	254	245	237	230	223	217	211
271	367	312	302	293	284	276	268	261	254	248
65	88	75	73	71	69	67	65	63	61	60
15	20	17	16	16	15	15	15	14	14	14
50	36	30	28	27	26	26	25	24	24	23

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	211	171	183	186	188	191	192	194	196	197	198
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	15615	13499	13880	13969	14045	14114	14170	14221	14273	14314	14352
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	4839	4106	4254	4288	4317	4344	4366	4385	4406	4421	4436
VALUE ADDED (THOUSAND DOLLARS)	6829	6257	6471	6520	6563	6602	6633	6662	6691	6714	6736
STATE TAXES (THOUSAND DOLLARS)	189	146	163	167	170	173	176	178	180	182	184
LOCAL TAXES (THOUSAND DOLLARS)	386	338	350	352	355	357	359	360	362	363	364

Net Results

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	-55	-72	-60	-57	-55	-52	-51	-49	-47	-46	-45
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	-1776	-2311	-1930	-1842	-1766	-1696	-1640	-1589	-1537	-1497	-1459
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	-690	-899	-752	-718	-688	-662	-640	-620	-600	-584	-569
VALUE ADDED (THOUSAND DOLLARS)	-998	-1300	-1086	-1037	-994	-955	-924	-895	-866	-843	-821
STATE TAXES (THOUSAND DOLLARS)	-77	-99	-83	-79	-75	-72	-70	-67	-65	-63	-62
LOCAL TAXES (THOUSAND DOLLARS)	-56	-73	-61	-58	-56	-53	-52	-50	-48	-47	-46

Impacts of Tourism Loss Only

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	266	243	243	243	243	243	243	243	243	243	243
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	17391	15810	15810	15810	15810	15810	15810	15810	15810	15810	15810
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	5529	5005	5005	5005	5005	5005	5005	5005	5005	5005	5005
VALUE ADDED (THOUSAND DOLLARS)	7827	7557	7557	7557	7557	7557	7557	7557	7557	7557	7557
STATE TAXES (THOUSAND DOLLARS)	266	245	245	245	245	245	245	245	245	245	245
LOCAL TAXES (THOUSAND DOLLARS)	441	410	410	410	410	410	410	410	410	410	410

Impacts of Facility Construction and Employment Only

CASE STUDY #3

SUPPORT BASE IN MANASQUAN TOWNSHIP

CASE STUDY #3
SUPPORT BASE IN MANASQUAN TOWNSHIP

The Context: Manasquan Township

In this third case study, the social and economic impacts of a support base in Manasquan Township are examined. Manasquan Township is located in Monmouth County, the most highly urbanized county in the study area. The coastal municipalities, like Manasquan, comprise only one quarter of the land in the county, but their population density is twice as high as the county average. The completion of the Garden State Parkway contributed to the rapid rate of growth experienced by the county in the 1950's and 1960's, transforming the area from a rural resort to a year-round commuter suburb. During the 1970's, the growth rate decreased considerably, especially in the fully developed coastal municipalities.

As a northern densely settled commuter suburb, Manasquan Township experiences the locational advantage of employment opportunity in New York City. The city is accessible by automobile or mass transit. The township itself is characterized by a population density of 6 persons per acre. Almost 29 percent of the housing is for primarily seasonal use. The measure of intensity of residential development, which reflects both the quality and density of dwelling units, is $161,753, with the value of a typical home in the township estimated to be $61,400. The township's development efforts have been primarily commercial/residential, resulting in a healthy central business district. Its major resort and recreational activities are family oriented.

Energy Facility: Support Base

The "proposed" energy facility in this case study is assumed to have 20 berths for supply boats during the exploration phase. It will be a permanent support base, designed to support development and production activities once initial exploration is completed. The base will require approximately 1,400 feet of wharf along the shore of Manasquan Bay. Some dredging will be required along the bayfront to accomodate supply boats. The total capital cost is expected to be $30,000,000 over a construction period of one year.

As shown in the facility environmental impact assessment matrix, on p. 5-54, activities during site preparation, construction and operation of the facility can effect numerous changes in the environment, both ecologically and qualitatively. For example, dredging during the construction and operation phases can cause a variety of changes including an increase in groundwater discharge and salinity, a decrease in the shoreline protection capacity, and an increase in erosion. Consequent effects of these changes on recreational resources may detract from the appeal of Manasquan Township to tourists.

The environmental changes are summarized and evaluated in the Schedule of Environmental Changes (I/O Table T8) located at the end of this appendix. Perceivable thresholds for the change categories are provided in section 2.4 of the User's Guide. As shown in the schedule, the liklihood of a category one change (loss of access to a recreational resource) is high due to the pre-emption of land for approximately 1400 linear feet of wharf frontage. Dredging during the construction year is expected to cause changes in water depth and in the shoreline, resulting in a loss in quality or degree of recreational opportunity. Periodic maintenance dredging, assumed to be required every five years, is not expected to result in a quality loss. Similarly, a lowering of visual quality is expected to result only in the construction year. The onsite storage of drilling muds, lubricants, solvents and other materials which are required to support offshore drilling operations is likely to be perceived as an introduction of a hazard to health safety, or the environment throughout the operation phase.

Impact Path 1: Purchase of Construction Materials and Equipment

I/O Table T3, Schedule of Project Requirements

In the case of the support base, the construction period is one year, and the total amount appears under the first year. The construction labor force consists of 34 manual workers and 12 non-manual workers. For operations, 93 manual and 7 non-manual workers are required annually.

Impact Path 2: Construction and Operation Employment

I/O Table T4, Directly Employed Migrants

As shown in the table, no migrants are expected in any of the sixty one municipalities comprising the 30-minute commuting zone. This is most likely due to the short duration of the construction period, and the relatively small labor force requirements which can be met locally.

I/O Table T5, Directly Employed Previous Residents

Within the commuting zone, the 409,298 previous resident population of working age persons is expected to contribute 100 percent of the manual and non-manual construction labor force. Middletown and Dover Townships will supply four workers apiece, and Brick Township will supply three. While the support base is unusual in that its operations labor force is greater than its construction labor force, the assumption that operations workers are locally supplied is also reasonable in this instance. Again, Middletown and Dover supply the greatest number of workers, nine each, and Brick is third with seven.

I/O Tables T6-A and T6-B, Unsupplied Family and Single Person Housing Demand

Unmet housing demand is a situation which is unlikely to occur in the shorefront study area in the foreseeable future. This is especially true for the short construction period of a support base in which no migrants are expected. In this case, I/O Tables T6-A and T6-B contain all zeros.

I/O Table T7, Facility Employee Income

Facility employee income in each municipality corresponds directly to the number of workers supplied. Therefore, Middletown, Dover and Brick are the recipients of the greatest amount of income. In the construction period, this comes to $129, $125, and $105 thousand, respectively. Annual operations earnings are approximately double at $263, $252, and $213 thousand apiece.

Impact Path 3: Tourist Response to Environmental Impact

I/O Table T9, Tourism Diverted from Each Municipality

This table shows the number of tourists, in person-days, diverted from the environmentally affected municipality, Manasquan, to other shorefront municipalities. The eleven columns represent each year of the eleven-year analysis period, and the twenty rows correspond to the twenty visitor types listed at the end of this appendix. The first visitor category, seasonal home/shorefront recreation, is expected to incur the highest diversion rate, peaking with 64 thousand person-days lost in the second year (the first year of operation) and staying upwards of 50 thousand for the next four years, before dropping slightly to well over 40 thousand person-days for the rest of the analysis period. Exhibiting substantial losses, as well, is the category two visitor type, seasonal home/bay water recreation. The presence of zeros in the ninth through twelfth rows indicates the absence of campsites in Manasquan Township and zero values for those visitor groups in the campsite accomodation categories. Third year losses (representing a typical operation year) add up to 160,522 person-days or 31.41 percent of the 511,004 annual person-days usually spent in the township.

I/O Table T10, Tourism Lost from Shorefront Study Area by Each Municipality

Figures in this table represent the loss of tourism, in person-days, by Manasquan Township from the entire shorefront region. As can be seen, the relative ranking of the twenty visitor groups is the same, but the numbers are considerably smaller, amounting to less than one-fourth of the number of tourists diverted. In the seasonal home/shorefront recreation category, the number of person-days lost in the second year is almost 19 thousand, decreasing to 16.7 thousand by the third year and then gradually to 12.5 thousand by the end of the analysis period. The total number of person-days lost across the twenty visitor categories in the third year amounts to 43,802. This represents 8.6 percent of the total visitors in the municipality annually.

I/O Table T11, Total Tourism Loss from Shorefront Study Area from All Municipalities

In this case study, I/O Table T11 is identical to I/O Table T10 because only one municipality is affected and, therefore, only one T10 is produced. If the environmental

effects had covered a broader area, additional tables would have been generated for each affected municipality, and I/O Table T11 would have added up the tallies for all twenty visitor types across the eleven year period.

Municipal Area Analysis: Municipal Social and Economic Impacts

I/O Table T12, Fiscal Impact from Migration

This table presents the net result of the increased revenue provided to municipalities by migrants to the area and the costs to the municipality of providing services to those additional people. Since there are no migrants expected in this case study, I/O Table T12 yields all zeros.

I/O Table T13, Value Lost by Seasonal Home Owners

This table estimates the opportunity cost to seasonal home owners in Manasquan Township who forego personal use or rental use of their homes. In this instance, the greatest losses are experienced in the second year of the analysis period (the first year of facility operation) at $1.3 million. In subsequent years the loss levels off to approximately $1 million. In a township with 897 seasonal homes, second year losses average $1,449 per household.

I/O Table T14, Tourism Final Demand Loss for Each Municipality

I/O Table T14 shows the loss in final demand incurred by the industries and establishments in Manasquan Township dependent on the tourist trade, over each year of the eleven year period. The eleven rows in the table correspond to a different category of expenditure as listed at the end of this appendix. The greatest losses can be seen to occur in the fifth category, eating and drinking establishments, peaking at $1.6 million in the second year. Zeros appear in the fourth category, campgrounds and trailer parks, and the last category, gambling, because these categories are not applicable to Manasquan Township. Total losses in the construction year add up to almost $5 million, which is 30 percent of the $16.7 million annual expenditure by tourists in the municipality.

I/O Table T15, Regional Expenditure for Materials and Equipment

The first column in the table are the WRC sector numbers listed at the end of this appendix. The remaining twenty-six rows and eleven columns of numbers express, in thousand dollars, the expenditure on required material and equipment, by sector, during the construction phase. For the support base, the largest expenditure is in sector #46, stone, clay, and glass products, where the $2.2 million spent accounts for 56 percent of the total $3.9 million expenditure for that year and, in this case, the entire construction phase. The total $3.9 million expenditure is only 13 percent of the total capital cost of $30 million (see I/O Table T3) because it does not include wages, profits, or material and equipment purchases made outside of the shorefront region.

I/O Table T16, Tourism Industry Final Demand Loss

Tourism person-days lost by each municipality from the shorefront (I/O Table T10) are converted to tourism industry final demand loss in dollars and are presented in I/O Table T16. In this case, only the five sectors whose numbers appear in the lefthand column experience losses which are traced across eleven years. Sector #56, services, incurs losses of $332 thousand in the second year with an eleven year total of $2.9 million (arrived at by adding across the row). Sector #54, wholesale and retail trade suffers substantial losses, as well, peaking in the second year with $245 thousand, with a total of $2.1 million across the eleven year period.

I/O Table T17, Final Demand Change for Shorefront Study Area

Facility employee income is also distributed across the WRC sectors though a separate table is not printed out since I/O Table T7 presents the same information in a more detailed form. The positive economic changes of Impact Paths 1 and 2, offset by the negative change of Impact Path 3 are presented in I/O Table T17. This time, the economic sector numbers are omitted and there are eleven columns of numbers representing each year of the analysis period. There are 56 rows corresponding to all 56 WRC sectors. Zeros appear where there is no impact or net effect. In the table, four sectors, numbers 15, 18, 34, and 54 are shown to exhibit negative effects. They are oil

and gas extraction, general building, other food products, and wholesale and retail trade, respectively. Twenty five other sectors show a net gain in final demand. Sector #46, stone, clay and glass products, shows the greatest increase in any single year at $2.2 million.

I/O Table T18, Economic Activity Change for Shorefront Study Area

In the regional analysis, multipliers are applied to each economic sector and the 56 rows in each column are added up to show the total economic change in the shorefront region for each year of the analysis period. I/O Table T18 indicates that there is an overall positive effect each year, peaking during the construction year at $13 million and increasing gradually from $3.3 million during the first year of operation to $4.3 million by the end of the analysis period. The regional economic activity change accounts for 84 percent of the state activity change during the construction year, and 26 percent of the state change during operations (see gross economic output in I/O Table T20).

State Area Analysis: New Jersey Social and Economic Impacts

I/O Table T19, Tourism Industry Final Demand Loss

At the state level, the loss of tourism from the shorefront region (I/O Table T10) is converted from person-days to dollars, and is presented in I/O Table T19. Each of the eleven rows corresponds to the expenditure category listed at the end of this appendix. The numbers represent the dollar loss, in thousands, of expenditures by all twenty visitor-group types in each category, for each of the eleven years. As in I/O Table T14 for the municipality, the greatest loss is sustained by category five, eating and drinking establishments. In the second year this loss amounts to $436 thousand and stays upwards of $300 thousand for the next four years, tapering off to $257 thousand by the end of the analysis period. Comparatively heavy losses also occur in the sixth, seventh and eighth categories: amusement and recreation, general retail trade, and groceries, respectively. Zero losses occur in category four, campgrounds and trailer parks, since these do not exist in Manasquan Township. Losses in category two, automobile rental are, also, quite minimal.

I/O Table T20, New Jersey Social and Economic Impacts

Overall social and economic change in New Jersey is depicted in I/O Table T20. The change in gross economic output peaks at $15.7 million in the first year (the construction year), dropping to $13.7 million at the beginning of operations and slowly climbing to $14.6 million by the end of the analysis period. These overall impacts are the result of the roughly $1.3 to $1.7 million lost each year of the analysis period, as shown on the T20 for tourism loss only, and the $17.4 million impetus from construction and $15.8 million impetus from annual operations shown on the T20 for construction and operating activities only.

In the construction year value added peaks at $6.9 million. In the first operation year, it drops back to $6.4 million but then creeps steadily upward to $6.8 million by the end of the analysis period. Considering tourism loss alone, value added amounts to just under $950 thousand during the construction of the support base, increases to $1.2 million in the first year of operation, and then declines gradually to $708 thousand by the end of the eleven-year period. Isolating construction and employment effects, it can be seen that value added comes to $7.8 million during the construction year, and maintains a level of $7.6 million throughout the operations phase.

The net change in employment averages $197 person-years over the eleven year period with a peak increase of 214 person-years in the construction phase. Considering facility construction and operation alone, 266 person-years of employment are expected to be generated in the first year, with 243 person-years generated during each operation year. This is offset by the average loss of 48 person-years of employment due to tourism loss. Peak losses occur in the second year (first year of operation) with 64 person-years of employment eliminated. State taxes are expected to show a net average gain of $181 thousand per year, while local taxes show a $364 thousand average increase in revenues.

SCHEDULE OF PROJECT REQUIREMENTS
FACILITY TYPE 1

ACTIVITY \ YEAR	1	2	3	4	5	6	7	8	9	10	11	TOTALS
FRACTION PER YEAR	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
CAPITAL COST ($000)	30000	0	0	0	0	0	0	0	0	0	0	30000
EMPLOYMENT (PERSON-YEARS)												
CONSTRUCTION-												
MANUAL	34	0	0	0	0	0	0	0	0	0	0	34
NON-MANUAL	13	0	0	0	0	0	0	0	0	0	0	13
ANN. OPERATION												
MANUAL	0	93	93	93	93	93	93	93	93	93	93	930
NON-MANUAL	0	7	7	7	7	7	7	7	7	7	7	70

TS Directly Employed Previous Residents, by municipality and year (in person-years)

1	3	3	3	3	3	3	3	3	3	3	1330	ABERDEEN
0	0	0	0	0	0	0	0	0	0	0	1301	ALLENHURST
1	2	2	2	2	2	2	2	2	2	2	1303	ASBURY PARK
0	0	0	0	0	0	0	0	0	0	0	1305	AVON-BY-THE-SEA
0	1	1	1	1	1	1	1	1	1	1	1306	BELMAR
0	1	1	1	1	1	1	1	1	1	1	1307	BRADLEY BEACH
0	1	1	1	1	1	1	1	1	1	1	1308	BRIELLE
0	1	1	1	1	1	1	1	1	1	1	1309	COLTS NECK
1	2	2	2	2	2	2	2	2	2	2	1311	EATONTOWN
0	1	1	1	1	1	1	1	1	1	1	1313	FAIR HAVEN
0	0	0	0	0	0	0	0	0	0	0	1314	FARMINGDALE
1	1	1	1	1	1	1	1	1	1	1	1315	FREEHOLD
1	3	3	3	3	3	3	3	3	3	3	1339	HAZLET
1	1	1	1	1	1	1	1	1	1	1	1318	HOLMDEL
2	4	4	4	4	4	4	4	4	4	4	1319	HOWELL
0	0	0	0	0	0	0	0	0	0	0	1320	INTERLAKEN
1	1	1	1	1	1	1	1	1	1	1	1321	KEANSBURG
0	1	1	1	1	1	1	1	1	1	1	1322	KEYPORT
0	1	1	1	1	1	1	1	1	1	1	1323	LITTLE SILVER
0	0	0	0	0	0	0	0	0	0	0	1324	LOCH ARBOUR
1	3	3	3	3	3	3	3	3	3	3	1326	MANALAPAN
0	1	1	1	1	1	1	1	1	1	1	1327	MANASQUAN
1	2	2	2	2	2	2	2	2	2	2	1328	MARLBORO
1	1	1	1	1	1	1	1	1	1	1	1329	MATAWAN
4	9	9	9	9	9	9	9	9	9	9	1331	MIDDLETOWN
2	4	4	4	4	4	4	4	4	4	4	1334	NEPTUNE
0	1	1	1	1	1	1	1	1	1	1	1335	NEPTUNE CITY
2	4	4	4	4	4	4	4	4	4	4	1337	OCEAN
1	2	2	2	2	2	2	2	2	2	2	1340	RED BANK
0	0	0	0	0	0	0	0	0	0	0	1341	ROOSEVELT
0	1	1	1	1	1	1	1	1	1	1	1342	RUMSON
0	0	0	0	0	0	0	0	0	0	0	1344	SEA GIRT
0	0	0	0	0	0	0	0	0	0	0	1345	SHREWSBURY
0	0	0	0	0	0	0	0	0	0	0	1347	SOUTH BELMAR
0	1	1	1	1	1	1	1	1	1	1	1348	SPRING LAKE
0	1	1	1	1	1	1	1	1	1	1	1349	SPRING LAKE HEIGHTS
0	1	1	1	1	1	1	1	1	1	1	1336	TINTON FALLS
0	1	1	1	1	1	1	1	1	1	1	1350	UNION BEACH
0	0	0	0	0	0	0	0	0	0	0	1351	UPPER FREEHOLD
1	3	3	3	3	3	3	3	3	3	3	1352	WALL
0	1	1	1	1	1	1	1	1	1	1	1353	WEST LONG BRANCH
0	0	0	0	0	0	0	0	0	0	0	1502	BAY HEAD
0	1	1	1	1	1	1	1	1	1	1	1504	BEACHWOOD
1	2	2	2	2	2	2	2	2	2	2	1505	BERKELEY
3	7	7	7	7	7	7	7	7	7	7	1506	BRICK
4	9	9	9	9	9	9	9	9	9	9	1507	DOVER
0	0	0	0	0	0	0	0	0	0	0	1510	ISLAND HEIGHTS
2	4	4	4	4	4	4	4	4	4	4	1511	JACKSON
1	2	2	2	2	2	2	2	2	2	2	1512	LACEY
0	0	0	0	0	0	0	0	0	0	0	1513	LAKEHURST
2	5	5	5	5	5	5	5	5	5	5	1514	LAKEWOOD
0	0	0	0	0	0	0	0	0	0	0	1515	LAVALLETTE
1	2	2	2	2	2	2	2	2	2	2	1518	MANCHESTER
0	0	0	0	0	0	0	0	0	0	0	1521	OCEAN GATE
0	0	0	0	0	0	0	0	0	0	0	1522	PINE BEACH
0	1	1	1	1	1	1	1	1	1	1	1523	PLUMSTED
1	2	2	2	2	2	2	2	2	2	2	1524	POINT PLEASANT
0	1	1	1	1	1	1	1	1	1	1	1525	POINT PLEASANT BEACH
0	0	0	0	0	0	0	0	0	0	0	1526	SEASIDE HEIGHTS
0	0	0	0	0	0	0	0	0	0	0	1527	SEASIDE PARK
0	1	1	1	1	1	1	1	1	1	1	1529	SOUTH TOMS RIVER

T7 Facility Employee Income, by municipality and year (in thousand dollars)

37	75	75	75	75	75	75	75	75	75	75	1330	ABERDEEN
2	4	4	4	4	4	4	4	4	4	4	1301	ALLENHURST
32	64	64	64	64	64	64	64	64	64	64	1303	ASBURY PARK
4	9	9	9	9	9	9	9	9	9	9	1305	AVON-BY-THE-SEA
13	28	28	28	28	28	28	28	28	28	28	1306	BELMAR
9	19	19	19	19	19	19	19	19	19	19	1307	BRADLEY BEACH
8	16	16	16	16	16	16	16	16	16	16	1308	BRIELLE
16	33	33	33	33	33	33	33	33	33	33	1309	COLTS NECK
28	59	59	59	59	59	59	59	59	59	59	1311	EATONTOWN
12	24	24	24	24	24	24	24	24	24	24	1313	FAIR HAVEN
3	6	6	6	6	6	6	6	6	6	6	1314	FARMINGDALE
19	41	41	41	41	41	41	41	41	41	41	1315	FREEHOLD
48	97	97	97	97	97	97	97	97	97	97	1339	HAZLET
16	35	35	35	35	35	35	35	35	35	35	1318	HOLMDEL
50	102	102	102	102	102	102	102	102	102	102	1319	HOWELL
2	4	4	4	4	4	4	4	4	4	4	1320	INTERLAKEN
20	42	42	42	42	42	42	42	42	42	42	1321	KEANSBURG
14	30	30	30	30	30	30	30	30	30	30	1322	KEYPORT
11	23	23	23	23	23	23	23	23	23	23	1323	LITTLE SILVER
1	2	2	2	2	2	2	2	2	2	2	1324	LOCH ARBOUR
36	73	73	73	73	73	73	73	73	73	73	1326	MANALAPAN
10	22	22	22	22	22	22	22	22	22	22	1327	MANASQUAN
34	70	70	70	70	70	70	70	70	70	70	1328	MARLBORO
18	38	38	38	38	38	38	38	38	38	38	1329	MATAWAN
129	263	263	263	263	263	263	263	263	263	263	1331	MIDDLETOWN
57	115	115	115	115	115	115	115	115	115	115	1334	NEPTUNE
11	22	22	22	22	22	22	22	22	22	22	1335	NEPTUNE CITY
51	103	103	103	103	103	103	103	103	103	103	1337	OCEAN
23	48	48	48	48	48	48	48	48	48	48	1340	RED BANK
2	4	4	4	4	4	4	4	4	4	4	1341	ROOSEVELT
15	32	32	32	32	32	32	32	32	32	32	1342	RUMSON
5	11	11	11	11	11	11	11	11	11	11	1344	SEA GIRT
6	13	13	13	13	13	13	13	13	13	13	1345	SHREWSBURY
3	6	6	6	6	6	6	6	6	6	6	1347	SOUTH BELMAR
8	16	16	16	16	16	16	16	16	16	16	1348	SPRING LAKE
10	22	22	22	22	22	22	22	22	22	22	1349	SPRING LAKE HEIGHTS
16	33	33	33	33	33	33	33	33	33	33	1336	TINTON FALLS
12	26	26	26	26	26	26	26	26	26	26	1350	UNION BEACH
6	12	12	12	12	12	12	12	12	12	12	1351	UPPER FREEHOLD
38	77	77	77	77	77	77	77	77	77	77	1352	WALL
16	33	33	33	33	33	33	33	33	33	33	1353	WEST LONG BRANCH
3	5	5	5	5	5	5	5	5	5	5	1502	BAY HEAD
14	30	30	30	30	30	30	30	30	30	30	1504	BEACHWOOD
36	72	72	72	72	72	72	72	72	72	72	1505	BERKELEY
105	213	213	213	213	213	213	213	213	213	213	1506	BRICK
125	252	252	252	252	252	252	252	252	252	252	1507	DOVER
3	6	6	6	6	6	6	6	6	6	6	1510	ISLAND HEIGHTS
50	102	102	102	102	102	102	102	102	102	102	1511	JACKSON
26	54	54	54	54	54	54	54	54	54	54	1512	LACEY
6	12	12	12	12	12	12	12	12	12	12	1513	LAKEHURST
65	131	131	131	131	131	131	131	131	131	131	1514	LAKEWOOD
4	8	8	8	8	8	8	8	8	8	8	1515	LAVALLETTE
35	68	68	68	68	68	68	68	68	68	68	1518	MANCHESTER
2	5	5	5	5	5	5	5	5	5	5	1521	OCEAN GATE
3	7	7	7	7	7	7	7	7	7	7	1522	PINE BEACH
9	19	19	19	19	19	19	19	19	19	19	1523	PLUMSTED
35	71	71	71	71	71	71	71	71	71	71	1524	POINT PLEASANT
10	21	21	21	21	21	21	21	21	21	21	1525	POINT PLEASANT BEACH
4	8	8	8	8	8	8	8	8	8	8	1526	SEASIDE HEIGHTS
3	7	7	7	7	7	7	7	7	7	7	1527	SEASIDE PARK
7	15	15	15	15	15	15	15	15	15	15	1529	SOUTH TOMS RIVER

T9 TOURISM DIVERTED FROM EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 2

47469	64004	56596	54508	52519	50623	48815	47091	45448	43881	42388
24865	35325	34309	33349	32432	31554	30716	29913	29146	28412	27710
20495	13962	11895	11550	11222	10909	10610	10326	10055	9797	9551
14316	24194	21008	20346	19714	19111	18536	17988	17465	16965	16489
8137	8137	6187	5484	4944	4528	4206	3958	3767	3620	3506
2503	2644	2229	2009	1837	1702	1596	1513	1447	1396	1356
5006	2516	1907	1733	1602	1501	1425	1367	1323	1289	1263
3050	3264	2494	2233	2033	1878	1759	1667	1596	1542	1500
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
4927	6609	5796	5541	5301	5074	4860	4658	4467	4287	4117
2644	3739	3353	3229	3112	3001	2896	2797	2703	2614	2530
1666	1133	832	801	772	745	719	695	672	650	630
1923	3236	2583	2480	2382	2290	2202	2120	2042	1969	1900
10260	10743	8870	7695	6749	5985	5368	4869	4467	4141	3879
1599	1851	1639	1469	1332	1219	1126	1051	988	933	896
690	368	277	249	226	208	194	182	173	166	160
568	702	547	483	432	390	357	330	308	290	276

T10 TOURISM LOST FROM SHOREFRONT STUDY AREA BY EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 26

11867	18881	16696	16080	15493	14934	14400	13892	13407	12945	12504
6216	7948	7719	7504	7297	7100	6911	6730	6558	6393	6235
5124	3630	3093	3003	2918	2836	2759	2685	2614	2547	2483
3579	6291	5462	5290	5126	4969	4819	4677	4541	4411	4287
2170	2401	1825	1618	1458	1336	1241	1168	1111	1068	1034
667	780	658	593	542	502	471	446	427	412	400
1335	742	563	511	472	443	420	403	390	380	373
813	963	736	659	600	554	519	492	471	455	442
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
1232	1950	1710	1635	1564	1497	1434	1374	1318	1265	1215
661	1103	989	953	918	885	854	825	797	771	746
417	334	246	236	228	220	212	205	198	192	186
481	955	762	732	703	675	650	625	603	581	560
2736	3169	2617	2270	1991	1765	1583	1436	1318	1222	1144
426	546	483	433	393	360	332	310	292	277	264
184	109	82	73	67	61	57	54	51	49	47
152	207	161	142	127	115	105	97	91	86	81

T11 TOTAL TOURISM LOSS FROM SHOREFRONT STUDY AREA FROM ALL MUNICIPALITIES, BY GROUP TYPE AND YEAR (IN PERSON-DAYS)

11867	18881	16696	16080	15493	14934	14400	13892	13407	12945	12504
6216	7948	7719	7504	7297	7100	6911	6730	6558	6393	6235
5124	3630	3093	3003	2918	2836	2759	2685	2614	2547	2483
3579	6291	5462	5290	5126	4969	4819	4677	4541	4411	4287
2170	2401	1825	1618	1458	1336	1241	1168	1111	1068	1034
667	780	658	593	542	502	471	446	427	412	400
1335	742	563	511	472	443	420	403	390	380	373
813	963	736	659	600	554	519	492	471	455	442
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
1232	1950	1710	1635	1564	1497	1434	1374	1318	1265	1215
661	1103	989	953	918	885	854	825	797	771	746
417	334	246	236	228	220	212	205	198	192	186
481	955	762	732	703	675	650	625	603	581	560
2736	3169	2617	2270	1991	1765	1583	1436	1318	1222	1144
426	546	483	433	393	360	332	310	292	277	264
184	109	82	73	67	61	57	54	51	49	47
152	207	161	142	127	115	105	97	91	86	81

T13 VALUE LOST BY SEASONAL HOME OWNERS FOR EACH MUNICIPALITY, BY YEAR (IN THOUSAND DOLLARS) 24

997.3	1279.7	1152.4	1114.6	1078.6	1044.3	1011.5	980.3	950.4	922.0	894.8

T14 TOURISM INDUSTRY FINAL DEMAND LOSS FOR EACH MUNICIPALITY, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS) 26

353	406	349	324	303	285	270	257	245	235	227
8	7	5	5	4	4	4	3	3	3	3
340	301	233	208	189	175	163	155	148	143	139
0	0	0	0	0	0	0	0	0	0	0
1366	1560	1341	1261	1193	1134	1083	1038	999	964	933
842	1017	893	850	811	777	747	719	694	670	649
859	1037	911	867	827	793	761	733	707	684	662
943	1189	1061	1022	986	952	921	891	863	836	811
223	282	252	243	235	227	219	212	206	199	193
52	67	60	58	56	55	53	51	50	48	47
0	0	0	0	0	0	0	0	0	0	0

T15 REGIONAL EXPENDITURES FOR MATERIALS AND EQUIPMENT, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS) FACILITY # 1

3	36	0	0	0	0	0	0	0	0	0	0
12	23	0	0	0	0	0	0	0	0	0	0
16	69	0	0	0	0	0	0	0	0	0	0
18	42	0	0	0	0	0	0	0	0	0	0
19	3	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	4	0	0	0	0	0	0	0	0	0	0
38	169	0	0	0	0	0	0	0	0	0	0
39	7	0	0	0	0	0	0	0	0	0	0
40	5	0	0	0	0	0	0	0	0	0	0
41	4	0	0	0	0	0	0	0	0	0	0
42	18	0	0	0	0	0	0	0	0	0	0
43	167	0	0	0	0	0	0	0	0	0	0
44	29	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	2193	0	0	0	0	0	0	0	0	0	0
47	244	0	0	0	0	0	0	0	0	0	0
48	63	0	0	0	0	0	0	0	0	0	0
49	153	0	0	0	0	0	0	0	0	0	0
50	52	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0
52	6	0	0	0	0	0	0	0	0	0	0
53	88	0	0	0	0	0	0	0	0	0	0
54	273	0	0	0	0	0	0	0	0	0	0
55	34	0	0	0	0	0	0	0	0	0	0
56	232	0	0	0	0	0	0	0	0	0	0

T16 TOURISM INDUSTRY FINAL DEMAND LOSS, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS)

15	7	9	8	7	7	6	6	6	5	5	5
18	13	18	16	16	15	15	14	14	13	13	13
34	82	106	92	87	83	80	77	74	71	69	67
54	190	245	214	203	193	184	177	170	164	158	153
56	296	382	280	263	249	236	226	217	209	202	196

```
T17  FINAL DEMAND CHANGE FOR SHOREFRONT STUDY AREA, BY SECTOR AND YEAR (IN THOUSAND DOLLARS)
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
      36       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
      23       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
      -7      -9      -8      -7      -7      -6      -6      -6      -5      -5      -5
      69       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
      29     -18     -16     -16     -15     -15     -14     -14     -13     -13     -13
     169     340     340     340     340     340     340     340     340     340     340
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
     -82    -106     -92     -87     -83     -80     -77     -74     -71     -69     -67
      10      20      20      20      20      20      20      20      20      20      20
      65     124     124     124     124     124     124     124     124     124     124
       0       0       0       0       0       0       0       0       0       0       0
     169       0       0       0       0       0       0       0       0       0       0
      66     120     120     120     120     120     120     120     120     120     120
       5       0       0       0       0       0       0       0       0       0       0
       4       0       0       0       0       0       0       0       0       0       0
      28      21      21      21      21      21      21      21      21      21      21
     210      88      88      88      88      88      88      88      88      88      88
      29       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
    2193       0       0       0       0       0       0       0       0       0       0
     244       0       0       0       0       0       0       0       0       0       0
      63       0       0       0       0       0       0       0       0       0       0
     153       0       0       0       0       0       0       0       0       0       0
      52       0       0       0       0       0       0       0       0       0       0
      63     129     129     129     129     129     129     129     129     129     129
       6       0       0       0       0       0       0       0       0       0       0
     169     166     166     166     166     166     166     166     166     166     166
    -110    -199    -168    -157    -147    -138    -131    -124    -118    -112    -107
     267     477     477     477     477     477     477     477     477     477     477
     124      52     104     121     135     148     158     167     175     182     188
```

T18 ECONOMIC ACTIVITY CHANGE FOR SHOREFRONT STUDY AREA, CHANGE IN GROSS OUTPUT, BY YEAR (IN THOUSAND DOLLARS)

13141	3299	3646	3764	3864	3954	4027	4093	4158	4210	4255

T19 TOURISM INDUSTRY FINAL DEMAND LOSS, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

91	114	98	91	85	80	75	71	68	65	63
2	2	2	1	1	1	1	1	1	1	1
91	89	69	62	56	52	48	46	44	42	41
0	0	0	0	0	0	0	0	0	0	0
351	436	373	350	330	314	299	287	275	266	257
214	280	244	232	221	212	203	195	188	182	176
218	285	249	237	226	216	207	199	192	186	180
237	321	285	275	265	256	247	239	231	224	217
56	76	68	65	63	61	59	57	55	53	52
13	18	16	16	15	15	14	14	13	13	12
47	30	25	23	22	21	21	20	19	19	18

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	214	179	188	191	194	196	198	200	202	203	204
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	15709	13743	14029	14130	14218	14289	14358	14414	14469	14511	14554
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	4878	4202	4313	4351	4385	4413	4439	4461	4482	4499	4516
VALUE ADDED (THOUSAND DOLLARS)	6883	6395	6555	6611	6660	6700	6739	6771	6801	6825	6849
STATE TAXES (THOUSAND DOLLARS)	193	156	169	174	178	181	184	186	189	190	192
LOCAL TAXES (THOUSAND DOLLARS)	389	345	354	358	360	363	365	366	368	369	371

Net Results

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	-53	-64	-55	-52	-49	-47	-45	-43	-41	-40	-39
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	-1681	-2068	-1781	-1681	-1592	-1521	-1453	-1396	-1342	-1299	-1256
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	-651	-803	-693	-654	-620	-593	-566	-544	-523	-506	-490
VALUE ADDED (THOUSAND DOLLARS)	-944	-1162	-1002	-946	-896	-856	-818	-786	-756	-732	-708
STATE TAXES (THOUSAND DOLLARS)	-73	-89	-76	-72	-68	-65	-62	-59	-57	-55	-53
LOCAL TAXES (THOUSAND DOLLARS)	-53	-65	-56	-53	-50	-48	-46	-44	-42	-41	-40

Impacts of Tourism Loss Only

T30 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	266	243	243	243	243	243	243	243	243	243	243
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	17391	15810	15810	15810	15810	15810	15810	15810	15810	15810	15810
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	5529	5005	5005	5005	5005	5005	5005	5005	5005	5005	5005
VALUE ADDED (THOUSAND DOLLARS)	7827	7557	7557	7557	7557	7557	7557	7557	7557	7557	7557
STATE TAXES (THOUSAND DOLLARS)	266	245	245	245	245	245	245	245	245	245	245
LOCAL TAXES (THOUSAND DOLLARS)	441	410	410	410	410	410	410	410	410	410	410

Impacts of Facility Construction and Employment Only

CASE STUDY #4
COAL-FIRED POWER PLANT IN MIDDLE TOWNSHIP

CASE STUDY #4
COAL-FIRED PLANT IN MIDDLE TOWNSHIP

The Context: Middle Township

The fourth case study considers the social and economic impacts of a coal-fired power plant in Middle Township. Middle Township is located in Cape May County which, as discussed in Appendix E, is the smallest of the four counties in the study area in terms of both population size and land area. Most of the mainland communities in the county are classified as rural,year round. Ten percent of the land is on island communities that house 50 percent of the county's permanent population and account for two-thirds to three-fourths of all developed land. Resort land use accounts for at least 60 percent of all developed land. The Cape May economy is highly seasonal, based almost totally on the recreation tourism industry. Ninety percent of the land value in the county is directly or indirectly invested in the resort economy. By the end of the 1980's, the population of permanent residents is expected to increase by one-third, and the summer population should grow by 11 percent, both substantially slower growth rates than those experienced in the previous decade.

Middle Township is classified as a southern shore year-round rural community. The characteristics of municipalities in this classification are listed in Appendix E. Specifically, Middle Township is characterized by a population density of .2 persons per acre. Only 21.5 percent of the housing is considered to be primarily seasonal. The measure of intensity of residential development, which reflects both the quality and density of dwelling units, is $3,843, with the market value of a typical home in the township estimated to be $39,500. Middle Township is a relatively older community in which development efforts have focused on the preservation of historical structures.

Energy Facility: Coal-fired Power Plant

The "proposed" energy facility in this case study is a 500 megawatt unit with a total capital cost of $468,800,000 to be constructed over a five year period. The facility would utilize a closed cooling system, minimizing the need for water from adjacent Grassy Bay. Coal is anticipated to arrive at the plant site by rail, though the site fronts

along Grassy Bay, permitting installation of large unloading equipment should it become desirable.

As shown in the facility environmental impact assessment matrix on p. 5-56, activities during site preparation, construction and operation of the plant can affect numerous changes in the environment both ecologically and qualitatively. For example, faunal abundance may be decreased by the removal of surficial soils and vegetation during the site preparation phase. This activity may also generate a significant amount of dust that may detract from the appeal of Middle Township to tourists.

The environmental changes are summarized and evaluated in the Schedule of Environmental Changes (I/O Table T8) located at the end of this appendix. Perceivable thresholds for the change categories are provided in section 2.4 of the User's Guide. As shown in the schedule, the likelihood of a category one change (loss of access to a recreational resource) is high due to the preemption of a significant amount of waterfront acreage. A loss in the quality or degree of recreational opportunity is expected to occur during the third, fourth, and fifth years of the construction period as a result of the decrease in faunal abundance and traffic congestion caused by construction activity during these years. Note that water depth and shoreline changes in this category are considered to be low or minimal. This is because, in most locations in the study area, a coal-fired power plant would receive coal by rail, minimizing the dredging and channeling activities that could cause these changes. From the third year of construction on, there is a high probability of the lowering of visual and other aesthetic qualities. While the major structures of a coal-fired power plant are quite high and visible over a large area, the plant's inland location would limit its visibility to less than one mile of ocean front. The corresponding probability of visual marring of the ocean front is listed in the schedule as low. Finally, it is assumed that tourists do not perceive the operation of a state-of-the-art coal-fired power plant as producing toxic substances, pathogens or hazardous substances. Consequently, the probabilities of the introduction of hazards and temporary loss of resources due to pollution are low or minimal.

Impact Path 1: Purchase of Construction Materials and Equipment

I/O Table T3, Schedule of Project Requirements

The first I/O Table, T3 shows the total capital cost of $468,800,000, divided out by the fraction of completed construction for each year of the construction period. The number of manual and non-manual construction employees is listed for each year of the construction period, as given in Appendix B. For the remainder of the eleven-year analysis period, the annual operations labor force in both the manual and non-manual categories appears as 90 and 12, respectively.

I/O Table T4, Directly Employed Migrants

I/O Table T4 shows, by municipality and year, the number of directly employed migrants drawn to the region by employment opportunities at the plant. The information is presented in eleven columns, one for each year of the analysis period, and twenty nine rows, each corresponding to the municipality number and name listed in the last two columns on the right. These twenty nine municipalities comprise the 30-minute commuting zone around Middle Township. As can be seen, municipalities 0102 (Atlantic City) and 0505 (Lower) are the only municipalities expected to receive migrant employees, 168 and 67 in person-years, respectively, over the five-year construction period. In the peak year of construction, year three, 108 migrants will be brought to the region. Ones appear from the sixth column on for Atlantic City to show that one person will migrate to the area during each year of operation.

I/O Table T5, Directly Employed Previous Residents

Within the zone, the 117,318 previous resident population of working age people is expected to contribute 73 percent of the manual laborers and 46 percent of the non-manual laborers during construction. A breakdown of these workers by municipality and year appears in I/O Table T5. During the construction period--the first five years represented by the first five columns--the numbers assume a fairly normal distribution, increasing substantially in the second year, peaking in the third and tapering off quite dramatically between the fourth and fifth year. In the sixth through eleventh years, the relatively smaller operations labor force is shown as constants. The employment effect

in any municipality can be found by tracing the row with the appropriate municipality number and name listed at the right across the eleven-year period. Again, Atlantic City and Lower lead the twenty nine municipalities with the largest numbers of previous residents employed. In the third column, and peak year of construction, 173 Atlantic City residents and 76 Lower residents will be employed at the plant. By adding up the first five columns, it can be seen that construction period person-years of employment total 376 in Atlantic City and 165 in Lower. For each year of plant operation, there are 18 and 8 person-years of labor supplied, respectively.

I/O Tables T6-A and T6-B, Unsupplied Family and Single Person Housing Demand

I/O Tables T6-A and T6-B present the Unsupplied Family and Unsupplied Single-Person housing demand in each municipality within the commuting zone. In this case, family housing demand in the more populous municipalities (population of 15,000 or more) of the commuting zone is 70 units. Since this is 0.6 percent of the total number of owner occupied housing of 10,785 in the same municipalities, an excess family housing demand of 11.8 units in Atlantic City and 4.7 units in Lower may result in the third year. In all other years and for single person homes in all years, incoming migrants amount to less than one-half of one percent of the housing supply, the amount needed to define an excess housing demand. The existence of this demand in the third year is unusual for a region that has an abundant supply of second and seasonal homes. It is most likely attributable to the relatively low number of owner occupied homes in the township coupled with increased numbers of migrants during the peak construction year.

I/O Table T7, Facility Employee Income

I/O Table T7 presents the earnings of resident and migrant employees for each year of the eleven-year analysis period. For the five-year construction period, the pattern of incremental increases and decreases from year to year corresponds directly to the change in the number of employees shown in I/O Tables T4 and T5. Consequently, the municipalities which are the recipients of the greatest amount of employee income are Atlantic City and Lower. In Atlantic City, facility employee income peaks at $8.2 million in the third year and amounts to $17.8 million if the five-year construction period income is added together. In the operation phase, $539 thousand of income is earned annually by Atlantic City residents. Note that the figures in the table reflect the

income of both migrants ad previous residents in each municipality. The closest approximation of the portion attributable to one group or the other is the number of employees in one group as compared to the total number of employees supplied by the municipality (i.e., add together the figures from I/O Tables T4 and T5). This fraction is then applied to the dollar value listed in I/O Table T7.

Impact Path 3. Tourist Response to Environmental Impacts

I/O Table T9, Tourism Diverted from Each Municipality

I/O Table T9 shows the number of tourists, in person days, diverted from the environmentally affected municipality which, in this case, is indicated in the title as #78, Middle Township. There are eleven columns of numbers, representing each year of the analysis period, and twenty rows corresponding to the twenty visitor types. These twenty types are keyed to the list found at the end of this appendix. The ninth row refers to the ninth visitor type, campground/shorefront recreation, which in this case will be diverted to other shorefront municipalities at the rate of 33,576 person-days in the first year, peaking at 201,025 person-days in the fifth and losing between 156,000 and 186,000 person-days of tourism each successive year of operation. Category ten, campground/bay-water recreation, also incurs substantial losses which amount to 191,068 in the fifth year and stay upwards of 172,000 for the remainder of the analysis period. Total losses in the third year, the peak year of construction, add up to 871,297 person-days which is 43.67 percent of the 1,995,196 person-days annually spent in the municipality by tourists.

I/O Table T10, Tourism Lost from Shorefront Study Area by Each Municipality

I/O Table T10 is similar to T9 except that the figures represent the tourism lost by Lacey Township from the entire shorefront region. As can be seen, the relative ranking of the twenty visitor groups is the same, but these losses are considerably smaller. During the construction phase less than one-fourth as many person-days diverted in the campground/shorefront recreation category are lost from the shorefront region entirely. For example, in the fifth year, 45,231 person-days are lost in that category as compared to 201,025 diverted. Tourism loss from the shorefront is less than tourism diverted from the municipality because many visitors who respond to environmental change will move

their recreational activities to a nearby municipality. The total tourism loss in the third year amounts to 198,338 person-days or 10 percent of the total annual person-days.

I/O Table T11, Tourism Lost from Shorefront Study Area from All Municipalities

In this case study, I/O Table T11 is identical to I/O Table T10 because only one municipality is affected and, therefore, only one T10 is produced. If the environmental effects had covered a broader area, additional tables would have been generated for each affected municipality, and I/O Table T11 would have added up the tallies for all twenty visitor types across the eleven-year period.

I/O Table T12, Fiscal Impact From Migration

I/O Table T12 presents the net result of the increased revenue provided to municipalities by migrants to the area and the costs to the municipalities of providing services to those additional people. Non-zero figures appear only in those rows corresponding to those municipalities listed in I/O Table T4 as being recipients of migrants. As exhibited in the table, the cost of providing municipal services outweighs increased revenues. In Lower the cost peaks in the third year at $4 thousand and then becomes quite insignificant by the end of the construction period. However, in Atlantic City, during the construction period, the negative fiscal impact is high in the second, third and fourth year. The third year costs alone amount to $57 thousand.

I/O Table T13, Value Lost by Seasonal Home Owners

I/O Table T13 estimates the opportunity cost to seasonal home owners in Middle Township who forego personal use or rental use of their homes. In this instance, the greatest losses are experienced in the third year at $1.3 million. Subsequent years show losses of approximately $1.2 million each. In a township of 1,218 seasonal homes, third year losses average $1,067 per household.

I/O Table T14, Tourism Industry Final Demand Loss

I/O Table T14 shows the loss in final demand incurred by the industries and establishments in Middle Township dependent on tourist trade, over each year of the

eleven-year analysis period. The eleven rows in the table each correspond to a different category of expenditure as listed at the end of this appendix. In the table, the greatest losses can be seen to occur in the fifth category, eating and drinking establishments, where from the third year on losses amount to over $10 million. Zeros appear in the last category, gambling, because this category is not applicable to Middle Township. Total third year losses amount to $32.3 million or 45 percent of the $72.4 million annual expenditures made in the township by tourists.

Regional Area Analysis: Shorefront Social and Economic Impacts

I/O Table T15, Regional Expenditures for Material and Equipment

I/O Table T15 has twenty five rows which along the last eleven columns express, in thousand dollars, the expenditure within the shorefront counties on required material and equipment, by economic sector, for each year of the construction phase. The first column of numbers identify the economic sector receiving expenditures shown in an individual row. The numbers are keyed to the list of Water Resource Council Sectors at the end of this appendix. For example, the largest amount of expenditures within the region for a coal-fired power plant are made in sector #47, primary metal industries with $7.3 million worth made in the third year of construction, alone. This represents 50 percent of the total $14.6 million spent in year three. The year three total expenditure is only 6.8 percent of the capital expenditure for that year for facility construction (see I/O Table T3). It is proportionately small because it does not include wages, profits, or material and equipment purchases made outside of the shorefront region.

I/O Table T16, Tourism Industy Final Demand Loss

Tourism person-days lost by each municipality from the shorefront (I/O Table T10) are converted to tourism industry final demand loss in dollars and presented in I/O Table T16. This loss is distributed across all of the affected WRC economic sectors. In this case only five sectors are affected. Sector numbers appear in the first column with losses traced across eleven years in the following columns. Sector #56, Services, experiences the greatest loss ($17.4 million over the analysis period) with sector #54, wholesale and retail trade second, ($8.8 million over the same period). Total tourism industry final demand loss in the region was almost $3.6 million in year three or 47

percent of all tourist trade lost (see third column I/O Table T19) because most tourist expenditures are made for imported goods.

I/O Table T17, Final Demand Change for Shorefront Study Area

Facility employee income is also distributed across the WRC sectors, though a separate table is not printed out since I/O Table T7 presents the same information in a more detailed form. The positive regional economic changes of Impact Paths 1 and 2 offset by the negative regional economic change of Impact Path 3 are presented in I/O Table T17. This time, the economic sector numbers are omitted and there are eleven columns of numbers representing each year of the analysis period. There are fifty six rows corresponding to all fifty six WRC economic sectors. Zeros appear where there is no impact at all or no net effect. In the table, five sectors are shown to experience a net negative effect at some point during the eleven-year period. They are sector numbers 15, 18, 34, 54, and 56. Sector #56, services, experiences losses in the operations phase that range from $1.2 million to $1.6 million. Twenty one sectors experience positive effects which, as in the case of sector numbers 47 and 55, can be quite substantial. Note that some sectors are only affected through the construction phase, while others experience increases or decreases for the duration of annual operation.

I/O Table T18, Economic Activity Change for Shorefront Study Area

The next step in the analysis applies multipliers to each economic sector. Then, by adding up the fifty six rows in each column, the total change in economic activity in the shorefront area can be determined for each year of the eleven year analysis period. I/O Table T18 indicates that there is an overall positive effect for the first four years, with the most substantial effect occuring in the third year amounting to $105 million. However, from the fifth year on, losses of more than $4 million result with higher losses occurring in the sixth year or first year of operation.

State Area Analysis: New Jersey Social and Economic Impacts

I/O Table T19, Tourism Industry Final Demand Loss

At the state level, the loss of tourism from the shorefront region (I/O Table T10) is converted from person-days to dollars, and is presented in I/O Table T19. Each of the eleven rows corresponds to an expenditure category listed at the end of this appendix. The numbers in the table represent the dollar loss, in thousands, of expenditures by all twenty visitor-group types in each category, for each of the eleven years. As in I/O Table T14 for the municipality, the greatest loss is sustained by category five, eating and drinking establishments. In the third year of construction the loss amounts to over $2.3 million and stays close to $2 million throughout the rest of the analysis period. Comparitively heavy losses also occur in the sixth, seventh and eighth categories--amusement and recreation, general retail trade, and groceries--with final demand losses in all three categories topping $900 thousand for the last nine years of the analysis period. In contrast, minimal losses are incurred in category two, automobile rental.

I/O Table T20, New Jersey Social and Economic Impacts

Overall social and economic change in New Jersey is depicted in I/O Table T20. The gross economic output, which corresponds to change in sales made by New Jersey firms, will be as high as $142 million during construction and will begin at $12 million during the first year of operation, growing slowly. This economic change is the net result of a tourism loss of $10 million in the third year (shown on the T20 for tourism impacts only) and gain due to facility construction expenditures of $152 million during that year (shown in the T20 for construction activities only).

Other measures of impact in that third year of activity include a change of employment for New Jersey of 2,466 jobs. This is the net change resulting from a loss of 329 person-years of employment in tourism related industries and a gain of 2,794 person years of employment due to capital expenditures for construction (shown in the appropriate T20's). In the third year value added amounts to $72 million. Throughout the operations phase it climbs from $6.9 million to $7.5 million. New Jersey state taxes experience a net increase of $2.3 million with a tourism industry loss of $458 thousand and a facility related gain of $2.7 million. Local taxes provide a net $4.3 million in

revenues, as a result of an $316 thousand loss from the tourism industry and a $4.6 million gain from construction activities.

T3 SCHEDULE OF PROJECT REQUIREMENTS
FACILITY TYPE 10

ACTIVITY \ YEAR	1	2	3	4	5	6	7	8	9	10	11	TOTAL
FRACTION PER YEAR	0.0500	0.2600	0.4600	0.2000	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.000
CAPITAL COST ($000)	23440	121888	215648	93760	14064	0	0	0	0	0	0	46880
EMPLOYMENT (PERSON-YEARS)												
CONSTRUCTION-												
MANUAL	133	694	1227	534	80	0	0	0	0	0	0	266
NON-MANUAL	15	76	134	58	9	0	0	0	0	0	0	29
ANN. OPERATION												
MANUAL	0	0	0	0	0	90	90	90	90	90	90	54
NON-MANUAL	0	0	0	0	0	12	12	12	12	12	12	7

T4 Directly Employed Migrants Brought to Region, by municipality and year (in person-years)

0	0	0	0	0	0	0	0	0	0	0	0101	ABSECON
8	44	77	34	5	1	1	1	1	1	1	0102	ATLANTIC CITY
0	0	0	0	0	0	0	0	0	0	0	0106	CORBIN CITY
0	0	0	0	0	0	0	0	0	0	0	0107	EGG HARBOR CITY
0	0	0	0	0	0	0	0	0	0	0	0109	ESTELL MANOR
0	0	0	0	0	0	0	0	0	0	0	0111	GALLOWAY
0	0	0	0	0	0	0	0	0	0	0	0114	LINWOOD
0	0	0	0	0	0	0	0	0	0	0	0116	MARGATE CITY
0	0	0	0	0	0	0	0	0	0	0	0118	NORTHFIELD
0	0	0	0	0	0	0	0	0	0	0	0119	PLEASANTVILLE
0	0	0	0	0	0	0	0	0	0	0	0121	SOMERS POINT
0	0	0	0	0	0	0	0	0	0	0	0122	VENTNOR CITY
0	0	0	0	0	0	0	0	0	0	0	0123	WEYMOUTH
0	0	0	0	0	0	0	0	0	0	0	0501	AVALON
0	0	0	0	0	0	0	0	0	0	0	0502	CAPE MAY
0	0	0	0	0	0	0	0	0	0	0	0503	CAPE MAY POINT
0	0	0	0	0	0	0	0	0	0	0	0504	DENNIS
3	18	31	13	2	0	0	0	0	0	0	0505	LOWER
0	0	0	0	0	0	0	0	0	0	0	0506	MIDDLE
0	0	0	0	0	0	0	0	0	0	0	0507	NORTH WILDWOOD
0	0	0	0	0	0	0	0	0	0	0	0508	OCEAN CITY
0	0	0	0	0	0	0	0	0	0	0	0509	SEA ISLE CITY
0	0	0	0	0	0	0	0	0	0	0	0510	STONE HARBOR
0	0	0	0	0	0	0	0	0	0	0	0511	UPPER
0	0	0	0	0	0	0	0	0	0	0	0512	WEST CAPE MAY
0	0	0	0	0	0	0	0	0	0	0	0513	WEST WILDWOOD
0	0	0	0	0	0	0	0	0	0	0	0514	WILDWOOD
0	0	0	0	0	0	0	0	0	0	0	0515	WILDWOOD CREST
0	0	0	0	0	0	0	0	0	0	0	0516	WOODBINE

T5 Directly Employed Previous Residents, by municipality and year (in person-years)

4	19	34	15	2	4	4	4	4	4	4	0101	ABSECON
19	98	173	75	11	18	18	18	18	18	18	0102	ATLANTIC CITY
0	1	1	0	0	0	0	0	0	0	0	0106	CORBIN CITY
2	13	22	10	1	2	2	2	2	2	2	0107	EGG HARBOR CITY
0	2	4	2	0	0	0	0	0	0	0	0109	ESTELL MANOR
7	36	63	28	4	7	7	7	7	7	7	0111	GALLOWAY
3	17	30	13	2	3	3	3	3	3	3	0114	LINWOOD
5	26	45	20	3	5	5	5	5	5	5	0116	MARGATE CITY
4	22	38	17	3	4	4	4	4	4	4	0118	NORTHFIELD
7	34	61	26	4	6	6	6	6	6	6	0119	PLEASANTVILLE
5	28	50	22	3	5	5	5	5	5	5	0121	SOMERS POINT
6	32	57	25	4	6	6	6	6	6	6	0122	VENTNOR CITY
1	3	6	3	0	1	1	1	1	1	1	0123	WEYMOUTH
1	6	10	4	1	1	1	1	1	1	1	0501	AVALON
3	13	24	10	2	2	2	2	2	2	2	0502	CAPE MAY
0	1	1	0	0	0	0	0	0	0	0	0503	CAPE MAY POINT
2	10	18	8	1	2	2	2	2	2	2	0504	DENNIS
8	43	76	33	5	8	8	8	8	8	8	0505	LOWER
6	29	51	22	3	5	5	5	5	5	5	0506	MIDDLE
2	13	22	10	1	2	2	2	2	2	2	0507	NORTH WILDWOOD
7	36	64	28	4	7	7	7	7	7	7	0508	OCEAN CITY
1	7	13	6	1	1	1	1	1	1	1	0509	SEA ISLE CITY
1	3	5	2	0	1	1	1	1	1	1	0510	STONE HARBOR
3	18	32	14	2	3	3	3	3	3	3	0511	UPPER
1	3	5	2	0	0	0	0	0	0	0	0512	WEST CAPE MAY
0	1	2	1	0	0	0	0	0	0	0	0513	WEST WILDWOOD
2	13	23	10	1	2	2	2	2	2	2	0514	WILDWOOD
2	11	20	9	1	2	2	2	2	2	2	0515	WILDWOOD CREST
2	8	15	7	1	2	2	2	2	2	2	0516	WOODBINE

16-A Unsupplied Family Housing Demand, by municipality and year (in dwelling units)

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0101	ABSECON
0.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0102	ATLANTIC CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0106	CORBIN CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0107	EGG HARBOR CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0109	ESTELL MANOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0111	GALLOWAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0114	LINWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0116	MARGATE CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0118	NORTHFIELD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0119	PLEASANTVILLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0121	SOMERS POINT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0122	VENTNOR CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0123	WEYMOUTH
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0501	AVALON
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0502	CAPE MAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0503	CAPE MAY POINT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0504	DENNIS
0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0505	LOWER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0506	MIDDLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0507	NORTH WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0508	OCEAN CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0509	SEA ISLE CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0510	STONE HARBOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0511	UPPER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0512	WEST CAPE MAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0513	WEST WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0514	WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0515	WILDWOOD CREST
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0516	WOODBINE

17 Facility Employee Income, by municipality and year (in thousand dollars)

125	451	1151	501	75	103	103	103	103	103	103	0101	ABSECON
891	4628	8180	3557	536	539	539	539	539	539	539	0102	ATLANTIC CITY
4	21	37	16	2	3	3	3	3	3	3	0106	CORBIN CITY
81	421	744	324	49	66	66	66	66	66	66	0107	EGG HARBOR CITY
14	75	133	58	9	12	12	12	12	12	12	0109	ESTELL MANOR
230	1200	2122	923	139	189	189	189	189	189	189	0111	GALLOWAY
109	567	1002	436	65	89	89	89	89	89	89	0114	LINWOOD
165	858	1517	660	99	135	135	135	135	135	135	0116	MARGATE CITY
139	726	1284	558	84	115	115	115	115	115	115	0118	NORTHFIELD
220	1146	2026	882	132	181	181	181	181	181	181	0119	PLEASANTVILLE
180	939	1660	722	108	148	148	148	148	148	148	0121	SOMERS POINT
206	1072	1894	824	124	169	169	169	169	169	169	0122	VENTNOR CITY
21	111	197	86	13	18	18	18	18	18	18	0123	WEYMOUTH
34	188	333	145	22	30	30	30	30	30	30	0501	AVALON
86	448	792	345	52	71	71	71	71	71	71	0502	CAPE MAY
4	19	33	14	2	3	3	3	3	3	3	0503	CAPE MAY POINT
65	340	602	262	39	54	54	54	54	54	54	0504	DENNIS
383	1990	3517	1530	230	237	237	237	237	237	237	0505	LOWER
185	961	1700	739	111	152	152	152	152	152	152	0506	MIDDLE
81	423	747	325	49	67	67	67	67	67	67	0507	NORTH WILDWOOD
232	1206	2133	928	139	190	190	190	190	190	190	0508	OCEAN CITY
46	240	424	185	28	38	38	38	38	38	38	0509	SEA ISLE CITY
18	95	169	73	11	15	15	15	15	15	15	0510	STONE HARBOR
115	602	1063	463	69	95	95	95	95	95	95	0511	UPPER
17	90	159	69	10	14	14	14	14	14	14	0512	WEST CAPE MAY
6	31	55	24	4	5	5	5	5	5	5	0513	WEST WILDWOOD
82	429	759	330	50	68	68	68	68	68	68	0514	WILDWOOD
73	382	675	294	44	60	60	60	60	60	60	0515	WILDWOOD CREST
54	284	501	218	33	45	45	45	45	45	45	0516	WOODBINE

TABLE 19 TOURISM DIVERTED FROM EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON DAYS) 78

10743	17060	54592	58354	57989	57417	56877	56347	55826	55315	54814
11254	16769	51309	55230	55538	55199	54822	54453	54089	53731	53378
6957	3548	26931	12163	12069	11837	11717	11600	11484	11371	11260
4860	7717	24696	26398	26233	25974	25730	25490	25255	25023	24794
12828	15650	76345	76610	76923	72027	68488	65686	63397	61522	59987
6135	7822	31122	31336	35674	34982	34250	33722	33269	32878	32541
9641	3567	47249	27871	26839	23825	22790	21979	21338	20830	20427
5577	6804	33194	33309	33445	31316	29777	28559	27564	26749	26081
38576	40292	198946	199397	201025	185901	175898	168645	163121	158890	155447
32966	41207	167443	168398	191068	186263	182923	179269	176467	174165	172271
6715	2869	38188	21327	20721	18146	17394	16856	16464	16177	15968
6715	8058	39789	39879	40205	37180	35180	33729	32624	31778	31139
1744	2759	8852	9448	9361	9224	9097	8972	8851	8734	8619
1872	2780	8533	9157	9247	9150	9058	8968	8880	8794	8711
885	456	3430	1569	1551	1507	1485	1464	1443	1423	1403
1021	1615	5182	5531	5480	5400	5325	5252	5181	5112	5045
7117	6703	42387	42544	42701	40064	38134	36588	35313	34259	33388
2218	2836	11251	11831	12904	12611	12360	12177	12019	11882	11763
726	263	3555	2067	1971	1772	1695	1634	1585	1546	1515
555	678	3303	3315	3327	3122	2971	2851	2752	2670	2602

110 TOURISM LOST FROM SHORELFRONT STUDY AREA BY EACH MUNICIPALITY, BY FROM TYPE AND YEAR (IN PERSON-DAYS) 78

3115	4947	12964	13859	13773	13771	13840	13711	13584	13460	13344
3264	4863	12186	13117	13202	13432	13340	13250	13162	13074	12989
2018	1029	6396	2889	2866	2830	2851	2823	2795	2767	2740
1409	2238	5865	6270	6230	6320	6261	6203	6145	6089	6034
3720	4538	17178	17237	17308	16326	15524	14889	14370	13945	13597
1779	2268	7002	7051	8027	7929	7763	7644	7541	7452	7376
2796	1034	10431	6271	6039	5400	5166	4982	4837	4721	4630
1617	1973	7469	7494	7525	7098	6750	6473	6248	6063	5912
9737	11685	44763	44864	45231	42137	39670	38226	36974	36015	35330
9560	11950	37675	37890	42990	42220	41443	40634	39999	39477	39048
1947	832	7467	4799	4682	4113	3943	3821	3732	3667	3619
1947	2337	8953	8973	9046	8427	7974	7645	7395	7203	7056
506	800	2102	2244	2223	2245	2214	2183	2154	2125	2097
543	806	2027	2175	2196	2227	2204	2182	2161	2140	2120
257	132	815	373	348	367	361	356	351	346	341
296	468	1231	1314	1301	1314	1296	1278	1261	1244	1228
2064	2524	9537	9572	9608	9081	8644	8293	8004	7765	7569
643	823	2532	2550	2903	2858	2802	2760	2724	2693	2664
211	76	800	465	448	402	384	370	359	350	343
141	197	743	746	749	708	674	646	624	605	590

TABLE 11 TOTAL TOURISM LOSS FROM SHORE FRONT STUDY AREA FROM ALL MUNICIPALITIES, BY GROUP TYPE AND YEAR (IN PERSON-DAYS)

3113	4947	12966	13859	13773	13971	13840	13711	13584	13460	13338
3264	4863	12186	13117	13202	13432	13340	13250	13162	13074	12989
2018	1029	6396	2889	2866	2880	2851	2823	2795	2767	2740
1409	2238	5865	6270	6230	6320	6261	6203	6145	6089	6034
3720	4538	17178	17237	17308	16326	15524	14889	14370	13945	13597
1779	2268	7002	7051	8027	7929	7763	7644	7541	7452	7376
2796	1084	10631	6271	6039	5400	5166	4982	4837	4721	4630
1617	1973	7469	7494	7525	7098	6750	6473	6248	6063	5912
9737	11685	44763	44864	45231	42137	39870	38226	36974	36015	35280
9540	11950	37675	37890	42990	42220	41463	40634	39999	39477	39048
1947	832	7467	4799	4662	4113	3943	3821	3732	3667	3619
1947	2337	8953	8973	9046	8427	7974	7645	7395	7203	7056
506	800	2102	2244	2223	2245	2214	2188	2154	2125	2097
543	806	2027	2175	2196	2227	2204	2182	2161	2140	2120
257	132	815	373	368	367	361	356	351	346	341
296	468	1231	1314	1301	1314	1296	1278	1261	1244	1228
7064	2524	9587	9572	9608	9081	8644	8293	8004	7765	7568
643	823	2532	2550	2903	2858	2802	2760	2724	2693	2666
211	76	800	465	448	402	384	370	359	350	343
161	497	743	746	749	708	674	646	624	605	590

112 FISCAL IMPACT FROM REVALUATION BY MUNICIPALITY AND YEAR (IN THOUSAND DOLLARS)

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0101	ABSECON
-5.9	-32.3	-56.5	-74.7	-3.7	-0.7	-0.7	-0.7	-0.7	-0.7	-0.7	0102	ATLANTIC CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0106	CORBIN CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0107	EGG HARBOR CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0109	ESTELL MANOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0111	GALLOWAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0114	LINWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0116	MARGATE CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0118	NORTHFIELD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0119	PLEASANTVILLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0121	SOMERS POINT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0122	VENTNOR CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0123	WEYMOUTH
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0501	AVALON
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0502	CAPE MAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0503	CAPE MAY POINT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0504	DENNIS
-0.4	-2.3	-4.0	-1.7	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0505	LOWER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0506	MIDDLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0507	NORTH WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0508	OCEAN CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0509	SEA ISLE CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0510	STONE HARBOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0511	UPPER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0512	WEST CAPE MAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0513	WEST WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0514	WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0515	WILDWOOD CREST
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0516	WOODBINE

[illegible] VALUE LOST BY SEASONAL HOME OWNERS, FOR EACH MUNICIPALITY, BY YEAR (IN THOUSAND DOLLARS) As

274.7 364.4 1279.6 1256.1 1233.9 1222.1 1211.7 1201.5 1191.5 1181.4 1171.

T14 TOURISM INDUSTRY FINAL DEMAND LOSS FOR EACH MUNICIPALITY, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS) 7

363	422	1970	1896	1958	1859	1793	1739	1696	1661	1632
14	14	76	68	70	66	63	61	59	57	56
622	616	3418	3076	3145	2950	2825	2728	2648	2583	2529
301	348	1655	1616	1706	1610	1549	1501	1464	1435	1412
1863	2095	10053	9529	9854	9336	8999	8731	8516	8342	8200
911	1063	4845	4648	4809	4578	4426	4304	4207	4128	4063
928	1083	4941	4740	4904	4668	4514	4389	4290	4209	4143
868	1040	4532	4376	4529	4332	4203	4098	4015	3948	3892
137	167	692	664	680	655	639	626	615	605	598
16	22	77	74	74	73	73	72	71	71	70
0	0	0	0	0	0	0	0	0	0	0

T15 REGIONAL EXPENDITURES FOR MATERIALS AND EQUIPMENT, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS) FACILITY # 10

3	1	5	9	4	1	0	0	0	0	0	0
12	2	9	15	7	1	0	0	0	0	0	0
14	0	1	2	1	0	0	0	0	0	0	0
18	8	40	71	31	5	0	0	0	0	0	0
19	59	307	543	236	35	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	3	17	30	13	2	0	0	0	0	0	0
38	7	36	64	28	4	0	0	0	0	0	0
40	7	36	64	28	4	0	0	0	0	0	0
41	7	34	60	26	4	0	0	0	0	0	0
42	1	7	13	6	1	0	0	0	0	0	0
43	65	336	594	258	39	0	0	0	0	0	0
44	22	112	198	86	13	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	120	622	1100	478	72	0	0	0	0	0	0
47	793	4125	7299	3173	476	0	0	0	0	0	0
48	17	87	155	67	10	0	0	0	0	0	0
49	108	561	992	431	65	0	0	0	0	0	0
50	63	327	579	252	38	0	0	0	0	0	0
51	0	1	2	1	0	0	0	0	0	0	0
52	0	1	2	1	0	0	0	0	0	0	0
53	65	340	601	261	39	0	0	0	0	0	0
54	103	538	952	414	62	0	0	0	0	0	0
55	39	205	363	158	24	0	0	0	0	0	0
56	93	484	857	372	56	0	0	0	0	0	0

T14 TOURISM INDUSTRY FINAL DEMAND LOSS, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS)

15	8	10	36	34	35	34	33	32	31	30	30
18	5	6	18	18	18	18	18	18	18	17	17
34	104	119	433	413	426	410	396	385	377	370	364
54	240	278	1004	960	992	954	922	897	876	859	846
56	514	513	2130	1903	1957	1859	1791	1736	1693	1658	1630

```
T17  FINAL DEMAND CHANGE FOR SHOREFRONT STUDY AREA, BY SECTOR AND YEAR (IN THOUSAND DOLLARS)
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        1        5        9        4        1        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        2        9       15        7        1        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        1        2        1        0        0        0        0        0        0        0
       -8      -10      -36      -34      -35      -34      -33      -32      -31      -30      -30
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        3       34       53       13      -13      -18      -18      -18      -18      -17      -17
      520     2706     4784     2081      312      347      347      347      347      347      347
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
     -104     -119     -433     -413     -426     -410     -396     -385     -377     -370     -364
       27      141      250      109       16       20       20       20       20       20       20
      171      892     1577      686      103      126      126      126      126      126      126
        0        0        0        0        0        0        0        0        0        0        0
        7       36       64       28        4        0        0        0        0        0        0
      162      846     1495      650       98      122      122      122      122      122      122
        7       36       64       28        4        0        0        0        0        0        0
        7       34       60       26        4        0        0        0        0        0        0
       29      153      271      118       18       21       21       21       21       21       21
      184      958     1693      736      111       90       90       90       90       90       90
       22      112      198       86       13        0        0        0        0        0        0
        0        0        0        0        0        0        0        0        0        0        0
      120      622     1100      478       72        0        0        0        0        0        0
      793     4125     7299     3173      476        0        0        0        0        0        0
       17       87      155       67       10        0        0        0        0        0        0
      108      561      992      431       65        0        0        0        0        0        0
       63      327      579      252       38        0        0        0        0        0        0
      174      907     1604      698      105      131      131      131      131      131      131
        0        1        2        1        0        0        0        0        0        0        0
      289     1507     2664     1158      174      169      169      169      169      169      169
     -155      163     -225     -621     -941     -907     -875     -850     -829     -812     -799
      685     3569     6310     2745      413      486      486      486      486      486      486
       99     2679     3515      552    -1588    -1468    -1400    -1345    -1302    -1267    -1239
```

T18 ECONOMIC ACTIVITY CHANGE FOR SHOREFRONT STUDY AREA, CHANGE IN GROSS OUTPUT, BY YEAR (IN THOUSAND DOLLARS)

9739	63265	104961	39547	-4249	-5537	-5136	-4815	-4561	-4349	-4185

TI? TOURISM INDUSTRY FINAL DEMAND LOSS, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

105	122	447	430	444	426	411	399	389	381	374
4	4	17	15	16	15	14	14	13	13	13
180	178	769	692	708	669	640	618	600	585	573
87	101	372	364	384	365	351	340	332	325	320
540	608	2277	2159	2232	2136	2060	1998	1950	1910	1878
264	308	1103	1058	1094	1053	1019	991	969	951	936
269	314	1124	1079	1116	1074	1039	1011	988	970	954
252	302	1036	1001	1035	1003	974	950	931	915	903
40	48	160	153	157	154	150	147	144	142	140
5	6	18	18	18	18	18	18	17	17	17
78	32	289	171	165	149	143	138	135	132	130

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 10

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	225	1495	2466	909	-133	-79	-68	-59	-53	-47	-43
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	14059	83190	141554	56500	112	11780	12109	12373	12584	12756	12894
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	5482	32349	55090	22027	114	1056	1181	1281	1361	1427	1479
VALUE ADDED (THOUSAND DOLLARS)	7057	42323	71746	28375	-415	6852	7036	7183	7300	7396	7473
STATE TAXES (THOUSAND DOLLARS)	189	1432	2284	766	-260	-99	-84	-72	-62	-54	-48
LOCAL TAXES (THOUSAND DOLLARS)	424	2517	4279	1704	-4	189	199	207	214	219	223

Net Results

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 10

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	-79	-86	-329	-306	-316	-302	-292	-283	-276	-271	-266
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	-2443	-2669	-10204	-9511	-9812	-9387	-9058	-8794	-8583	-8412	-8273
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	-932	-1020	-3891	-3628	-3743	-3582	-3457	-3357	-3277	-3212	-3159
VALUE ADDED (THOUSAND DOLLARS)	-1365	-1491	-5698	-5311	-5479	-5242	-5059	-4912	-4794	-4699	-4621
STATE TAXES (THOUSAND DOLLARS)	-110	-119	-458	-426	-440	-420	-405	-393	-384	-376	-370
LOCAL TAXES (THOUSAND DOLLARS)	-76	-83	-316	-295	-304	-291	-281	-273	-266	-261	-257

Impacts of Tourism Loss Only

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 10

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	304	1581	2794	1215	183	224	224	224	224	224	224
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	16503	85859	151758	66011	9924	21167	21167	21167	21167	21167	21167
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	6414	33369	58981	25655	3857	4638	4638	4638	4638	4638	4638
VALUE ADDED (THOUSAND DOLLARS)	8421	43814	77443	33686	5064	12095	12095	12095	12095	12095	12095
STATE TAXES (THOUSAND DOLLARS)	298	1551	2742	1193	179	322	322	322	322	322	322
LOCAL TAXES (THOUSAND DOLLARS)	500	2600	4595	1999	300	480	480	480	480	480	480

Impacts of Facility Construction and Employment Only

CASE STUDY #5

SUPPORT BASE IN OCEAN CITY

CASE STUDY #5
SUPPORT BASE IN OCEAN CITY

The Context: Ocean City

In this fifth case study, the social and economic impacts of a support base in Ocean City are examined. Ocean City is located in Cape May County which, as discussed in Appendix E, is the smallest of the four counties in the study area in terms of both population size and land area. Most of the mainland communities in the county are classified as rural, year round. Ten percent of the land is on island communities that house 50 percent of the county's permanent population and account for two-thirds to three-fourths of all developed land. Resort land use accounts for at least 60 percent of all developed land. The Cape May economy is highly seasonal, based almost totally on the recreation tourism industry. Ninety percent of the land value in the county is directly or indirectly invested in the resort economy. By the end of the 1980's, the population of permanent residents is expected to increase by one-third, and the summer population should grow by 11 percent, both substantially slower growth rates than those experienced in the previous decade.

Ocean City is classified as a southern, shorefront seasonal community. The characteristics of municipalities in this classification are listed in Appendix E. Specifically, Ocean City is characterized by a population density of 3.7 persons per acre. A large percentage (over 59) of the homes in the city are used seasonally. The measure of intensity of residential development, which reflects both the quality and density of dwelling units is $252,244, with the market value of a typical home in the township estimated to be $77,100. A resort and amusement center, Ocean City attracts the largest number of visitors in the county.

Energy Facility: Support Base

The "proposed" energy facility in this case study is assumed to have 20 berths for supply boats for use during the exploration phase of OCS development. It will become a permanent support base to support development and production activities once initial exploration is completed. The base will require approximately 1,400 feet of wharf along Great Egg Harbor. Some dredging will be required along the bayfront to accommodate

supply boats. The total capital cost is expected to be $30,000,000 over a construction period of one year.

As shown in the facility environmental impact assessment matrix at the end of this appendix, activities during site preparation, construction and operation of the facility can effect numerous changes in the environment, both ecologically and qualitatively. For example, dredging during the construction and operation phases can cause a variety of changes including an increase in groundwater discharge and salinity, a decrease in the shoreline protection capacity, and an increase in erosion. Consequent effects of these changes on recreational resources may detract from the appeal of Ocean City to tourists.

The environmental changes are summarized and evaluated in the Schedule of Environmental Changes (I/O Table T8) located at the end of this appendix. Perceivable thresholds for the change categories are provided in section 2-4 of the User's Guide. As shown in the schedule, the likelihood of a category one change (loss of access to a recreational resource) is high due to the pre-emption of land for approximately 1,400 linear feet of wharf footage. Dredging during the construction year is expected to cause changes in water depth and in the shoreline, resulting in a loss in quality or degree of recreational opportunity. Periodic maintenance dredging, assumed to be required every five years, is not expected to result in a quality loss. Similarly, a lowering of visual quality is expected to occur only in the construction year. The onsite storage of drilling muds, lubricants, solvents and other materials which are required to support offshore drilling operations is likely to be perceived as an introduction of a hazard to health, safety, or the environment throughout the operation phase.

Impact Path 1: Purchase of Construction Materials and Equipment

I/O Table T3, Schedule of Project Requirements

In the case of the support base, the construction period is one year, and the total amount appears under the first year. The construction labor force consists of 34 manual workers and 12 non-manual workers. For operations, 93 manual and 7 non-manual workers are required annually.

Impact Path 2: Construction and Operation Employment

I/O Table T4, Directly Employed Migrants

As shown in the table, of the thirty municipalities comprising the 30-minute zone, only Atlantic City can expect migration and then, only one person-year. This is most likely due to the short duration of the construction period, and the relatively small labor force requirements which can be met locally. Only fractions of a person-year will migrate to some of the other municipalities. These are rounded down to zeros.

I/O Table T5, Directly Employed Previous Residents

Within the commuting zone, the 125,983 previous resident population of working persons is expected to contribute virtually all of the manual and non-manual construction labor force. Atlantic City supplies the most labor with seven person-years and Galloway, Ocean City and Lower will supply three workers a piece. While the support base is unusual in that its operations labor force is greater than its construction labor force, the assumption that operations workers are locally supplied is also reasonable in this instance. Atlantic City provides the most operations workers, with 17, and Lower is second with seven.

I/O Table T6-A and T6-B, Unsupplied Family and Single Person Housing Demand

Unmet housing demand is unlikely to occur in a situation where there is such a short construction period and no influx of migrants. Hence, in this case study, these tables contain all zeros.

I/O Table T7, Facility Employee Income

Facility employee income in each municipality corresponds directly to the number of workers supplied. Therefore, Atlantic City, Lower, Galloway and Ocean City are the recipients of the greatest amount of income. In the construction period, this covers to $257, $112, $83, and $83, respectively. Annual operations earnings are approximately double at $487, $215, $174, and $175 a piece.

Impact Path 3: Tourist Response to Environmental Impacts

I/O Table T9, Tourism Diverted from Each Municipality

In this table, the first visitor category, seasonal home/shorefront recreation, is expected to incur the highest diversion rate, peaking with 586 thousand person-days lost in the second year and staying upwards of 419 thousand for the rest of the analysis period. Exhibiting substantial losses, as well, is the category two visitor type, seasonal home/bay-water recreation. The presence of zeros in the ninth through twelfth categories indicates the absence of campsites in Ocean City. Third year losses (representing a typical operation year) add up to 1,286,543 person-days or 24.68 percent of the 5,223,458 annual person-days of tourism.

I/O Table T10, Tourism Lost from Shorefront Study Area by Each Municipality

The relative ranking of the twenty visitor groups is the same as in I/O Table T9, but the numbers are considerably smaller, amounting to about one-third to one-fourth the number of tourists diverted. In the seasonal home/shorefront recreational category, the number of person-days lost in the second year (first year of operation is 173 thousand) decreasing to 140 thousand by the third year and then gradually to 124 thousand by the end of the analysis period. The total number of person-days lost across the twenty visitor categories in the third year (a typical year of operation) amounts to 3,406,19. This represents 6.5 prcent of the total visitors in the municipality annually.

I/O Table T11, Total Tourism Lost from Shorefront Study Area from All Municipalities

This summary table is identical to I/O Table T10 because only one municipality is environmentally affected and, therefore, only one T10 is produced.

Municipal Area Analysis: Municipal Social and Economic Impacts

I/O Table T12, Fiscal Impact from Migration

Since no migrants are expected in this case study, I/O Table T12 yields all zeros except for a $700 negative impact in Atlantic City during the construction year which is attributable to the sole migrant person-year expected that year.

I/O Table T13, Value Lost by Seasonal Home Owners

This table estimates the opportunity cost to seasonal home owners in Ocean City who forego personal use or rental use of their homes. In this instance, the greatest losses are experienced in the second year of the analysis period (the first year of operation) at $12.3 million. In subsequent years, the loss levels off to approximately $10 million. In a city with 9,921 seasonal homes, second year losses average $1,240 per household.

I/O Table T14, Tourism Final Demand Loss for Each Municipality

The greatest losses in final demand can be seen to occur in the fifth category, eating and drinking establishments, peaking at $13 million in the second year. Zeros appear in the fourth category, campgrounds and trailer parks, and the last category, gambling, because these are not applicable to Ocean City. Total losses in the peak construction year add up to $44.4 million, which is 26 percent of the $171 million expended annually by tourists in the city.

Regional Area Analysis: Shorefront Social and Economic Impacts

I/O Table T15, Regional Expenditure for Materials and Equipment

The first column in the table is the WRC sector numbers listed at the end of this appendix. The remaining twenty six rows and eleven columns of numbers express, in thousand dollars, the expenditure on required material and equipment, by sector, during the construction phase. For the support base, the largest expenditure is in section #46, stone, clay and glass products, where the $2.2 million spent accounts for 56 percent of

the total $3.9 million expenditure for that year and, in this case, the entire construction phase. The total $3.9 million expenditure is only 13 percent of the total capital cost of $30 million (see I/O Table T3) because it does not include wages, profits, or material and equipment purchases made outside of the shorefront region.

I/O Table T16, Tourism Industry Final Demand Loss

Tourism person-days lost by each municipality from the shorefront (I/O Table T10) are converted to tourism industry final demand loss in dollars and are presented in I/O Table T16. In this case, only the five sectors whose numbers appear in the left hand column experience losses which are traced across eleven years. Sector #56, services, incurs losses of $2.8 million in the second year with an eleven year total of $23 million.

I/O Table T17, Final Demand Change for Shorefront Study Area

The positive economic changes of Impact Paths 1 and 2, offset by the negative change of Impact Path 3 are presented in I/O Table T17. This time, the economic sector numbers are omitted and there are eleven columns of numbers representing each year of the analysis period. There are 56 rows corresponding to all 56 WRC sectors. Zeros appear where there is no impact or net effect. In the table, four sectors, numbers 15, 18, 34, and 54 are shown to exhibit negative effects. They are oil and gas extraction, general building, other food products, and wholesale and retail trade, respectively. Twenty five other sectors show a net gain in final demand. Sector #46, stone, clay and glass products, shows the greatest increase in any single year at $2.2 million.

I/O Table T18, Economic Activity Change for Shorefront Study Area

In the regional analysis, the multipliers are applied to each economic sector and the 56 rows in each column are added up to show the total economic change in the shorefront region for each year of the analysis period. I/O Table T18 indicates that there is an overall negative effect each year, peaking during the first operation year at $14.7 million and sustaining losses of over $10 million during the next two years before declining steadily to about $7.6 million by the end of the analysis period.

I/O Table T19

At the state level, the loss of tourism from the shorefront region (I/O Table T10) is converted from person-days to dollars, and is presented in I/O Table T19. Each of the eleven rows corresonds to the expenditure category listed on p. 5-64. The numbers represent the dollar loss, in thousands, of expenditures by all twenty visitor-group types in each category, for each of the eleven years. As in I/O Table T14 for the municipality, the greatest loss is incurred by category five, eating and drinking establishments. In the second year this loss amounts to $3.5 million and stays upwards of $2 million for the duration of the analysis period. Comparatively heavy losses also occur in the sixth, seventh and eighth categories: amusement and recreational, general retail trade, and groceries, respectively. Zero losses occur in category four, campgrounds and trailer parks, since these do not exist in Manasquan Township.

I/O Table T20, New Jersey Social and Economic Impacts

Overall social and economic change in New Jersey is depicted in I/O Table T20. The change in gross economic output is, at first, a $2.4 million positive change, then it drops dramatically to a negative $1.2 million, increases the following year to a positive $1.9 million and climbs to $4.7 million by the end of the analysis period. The construction and employment contribution to this pattern can be seen on the T20 for facility activities only. The gross economic output comes to $17.4 million during the construction year and $15.8 million during annual operations. This is offset by large losses in output due to tourism loss (see T20 for tourism loss only) during the first two years of $15 and $17 million, decreasing each subsequent year of the analysis period to $11 million.

During the first three years, net value added is negative, amounting to $2 million loss during the first operation year, and steadily increasing in subsequent years to a positve $1.3 million by the end of the analysis period. This is the result of a negative effect due to tourism loss of $9.6 million by the second year, declining to $6.3 by the end of the eleven-year period, offset by a positive facility related effect of $7.8 million in the first year and $7.6 each year of operation.

The net change in employment averages a loss of 156 person-years, peaking in the first operation year with a negative 285 person-years. Considering facility construction and operation alone, 266 person-years of employment are expected to be generated in the first year, with 243 person-years generated during each operation year. This is offset by the average loss of 401 person-years of employment due to tourism loss. Peak losses occur in the second year with 528 person-years of employment eliminated. State taxes are expected to show a net average of $548 thousand per year, while local taxes show a 408 thousand average yearly loss in revenues.

T3 SCHEDULE OF PROJECT REQUIREMENTS
FACILITY TYPE 1

ACTIVITY \ YEAR	1	2	3	4	5	6	7	8	9	10	11	TOTALS
FRACTION PER YEAR	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000
CAPITAL COST ($000)	30000	0	0	0	0	0	0	0	0	0	0	30000
EMPLOYMENT (PERSON-YEARS)												
CONSTRUCTION-												
MANUAL	34	0	0	0	0	0	0	0	0	0	0	34
NON-MANUAL	13	0	0	0	0	0	0	0	0	0	0	13
ANN. OPERATION												
MANUAL	0	93	93	93	93	93	93	93	93	93	93	930
NON-MANUAL	0	7	7	7	7	7	7	7	7	7	7	70

T4 Directly Employed Migrants Brought to Region, by municipality and year (in person-years)

0	0	0	0	0	0	0	0	0	0	0	0101	ABSECON
1	0	0	0	0	0	0	0	0	0	0	0102	ATLANTIC CITY
0	0	0	0	0	0	0	0	0	0	0	0103	BRIGANTINE
0	0	0	0	0	0	0	0	0	0	0	0106	CORBIN CITY
0	0	0	0	0	0	0	0	0	0	0	0107	EGG HARBOR CITY
0	0	0	0	0	0	0	0	0	0	0	0109	ESTELL MANOR
0	0	0	0	0	0	0	0	0	0	0	0111	GALLOWAY
0	0	0	0	0	0	0	0	0	0	0	0112	HAMILTON
0	0	0	0	0	0	0	0	0	0	0	0114	LINWOOD
0	0	0	0	0	0	0	0	0	0	0	0115	LONGPORT
0	0	0	0	0	0	0	0	0	0	0	0116	MARGATE CITY
0	0	0	0	0	0	0	0	0	0	0	0118	NORTHFIELD
0	0	0	0	0	0	0	0	0	0	0	0119	PLEASANTVILLE
0	0	0	0	0	0	0	0	0	0	0	0120	PORT REPUBLIC
0	0	0	0	0	0	0	0	0	0	0	0121	SOMERS POINT
0	0	0	0	0	0	0	0	0	0	0	0122	VENTNOR CITY
0	0	0	0	0	0	0	0	0	0	0	0123	WEYMOUTH
0	0	0	0	0	0	0	0	0	0	0	0501	AVALON
0	0	0	0	0	0	0	0	0	0	0	0504	DENNIS
0	0	0	0	0	0	0	0	0	0	0	0505	LOWER
0	0	0	0	0	0	0	0	0	0	0	0506	MIDDLE
0	0	0	0	0	0	0	0	0	0	0	0507	NORTH WILDWOOD
0	0	0	0	0	0	0	0	0	0	0	0508	OCEAN CITY
0	0	0	0	0	0	0	0	0	0	0	0509	SEA ISLE CITY
0	0	0	0	0	0	0	0	0	0	0	0510	STONE HARBOR
0	0	0	0	0	0	0	0	0	0	0	0511	UPPER
0	0	0	0	0	0	0	0	0	0	0	0513	WEST WILDWOOD
0	0	0	0	0	0	0	0	0	0	0	0514	WILDWOOD
0	0	0	0	0	0	0	0	0	0	0	0515	WILDWOOD CREST
0	0	0	0	0	0	0	0	0	0	0	0516	WOODBINE

T5 Directly Employed Previous Residents, by municipality and year (in person-years)

1	3	3	3	3	3	3	3	3	3	3	0101	ABSECON
7	17	17	17	17	17	17	17	17	17	17	0102	ATLANTIC CITY
2	4	4	4	4	4	4	4	4	4	4	0103	BRIGANTINE
0	0	0	0	0	0	0	0	0	0	0	0106	CORBIN CITY
1	2	2	2	2	2	2	2	2	2	2	0107	EGG HARBOR CITY
0	0	0	0	0	0	0	0	0	0	0	0109	ESTELL MANOR
3	6	6	6	6	6	6	6	6	6	6	0111	GALLOWAY
2	5	5	5	5	5	5	5	5	5	5	0112	HAMILTON
1	3	3	3	3	3	3	3	3	3	3	0114	LINWOOD
0	0	0	0	0	0	0	0	0	0	0	0115	LONGPORT
2	4	4	4	4	4	4	4	4	4	4	0116	MARGATE CITY
2	4	4	4	4	4	4	4	4	4	4	0118	NORTHFIELD
2	6	6	6	6	6	6	6	6	6	6	0119	PLEASANTVILLE
0	0	0	0	0	0	0	0	0	0	0	0120	PORT REPUBLIC
2	5	5	5	5	5	5	5	5	5	5	0121	SOMERS POINT
2	5	5	5	5	5	5	5	5	5	5	0122	VENTNOR CITY
0	1	1	1	1	1	1	1	1	1	1	0123	WEYMOUTH
0	1	1	1	1	1	1	1	1	1	1	0501	AVALON
1	2	2	2	2	2	2	2	2	2	2	0504	DENNIS
3	7	7	7	7	7	7	7	7	7	7	0505	LOWER
2	5	5	5	5	5	5	5	5	5	5	0506	MIDDLE
1	2	2	2	2	2	2	2	2	2	2	0507	NORTH WILDWOOD
3	6	6	6	6	6	6	6	6	6	6	0508	OCEAN CITY
1	1	1	1	1	1	1	1	1	1	1	0509	SEA ISLE CITY
0	0	0	0	0	0	0	0	0	0	0	0510	STONE HARBOR
1	3	3	3	3	3	3	3	3	3	3	0511	UPPER
0	0	0	0	0	0	0	0	0	0	0	0513	WEST WILDWOOD
1	2	2	2	2	2	2	2	2	2	2	0514	WILDWOOD
1	2	2	2	2	2	2	2	2	2	2	0515	WILDWOOD CREST
1	1	1	1	1	1	1	1	1	1	1	0516	WOODBINE

T7 Facility Employee Income, by municipality and year (in thousand dollars)

45	94	94	94	94	94	94	94	94	94	94	0101	ABSECON
257	487	487	487	487	487	487	487	487	487	487	0102	ATLANTIC CITY
57	121	121	121	121	121	121	121	121	121	121	0103	BRIGANTINE
1	3	3	3	3	3	3	3	3	3	3	0106	CORBIN CITY
29	61	61	61	61	61	61	61	61	61	61	0107	EGG HARBOR CITY
5	11	11	11	11	11	11	11	11	11	11	0109	ESTELL MANOR
83	174	174	174	174	174	174	174	174	174	174	0111	GALLOWAY
62	129	129	129	129	129	129	129	129	129	129	0112	HAMILTON
39	82	82	82	82	82	82	82	82	82	82	0114	LINWOOD
7	14	14	14	14	14	14	14	14	14	14	0115	LONGPORT
59	124	124	124	124	124	124	124	124	124	124	0116	MARGATE CITY
50	105	105	105	105	105	105	105	105	105	105	0118	NORTHFIELD
79	166	166	166	166	166	166	166	166	166	166	0119	PLEASANTVILLE
6	12	12	12	12	12	12	12	12	12	12	0120	PORT REPUBLIC
65	136	136	136	136	136	136	136	136	136	136	0121	SOMERS POINT
74	155	155	155	155	155	155	155	155	155	155	0122	VENTNOR CITY
8	16	16	16	16	16	16	16	16	16	16	0123	WEYMOUTH
13	27	27	27	27	27	27	27	27	27	27	0501	AVALON
23	49	49	49	49	49	49	49	49	49	49	0504	DENNIS
112	215	215	215	215	215	215	215	215	215	215	0505	LOWER
66	139	139	139	139	139	139	139	139	139	139	0506	MIDDLE
29	61	61	61	61	61	61	61	61	61	61	0507	NORTH WILDWOOD
83	175	175	175	175	175	175	175	175	175	175	0508	OCEAN CITY
17	35	35	35	35	35	35	35	35	35	35	0509	SEA ISLE CITY
7	14	14	14	14	14	14	14	14	14	14	0510	STONE HARBOR
42	87	87	87	87	87	87	87	87	87	87	0511	UPPER
2	5	5	5	5	5	5	5	5	5	5	0513	WEST WILDWOOD
30	62	62	62	62	62	62	62	62	62	62	0514	WILDWOOD
26	55	55	55	55	55	55	55	55	55	55	0515	WILDWOOD CREST
20	41	41	41	41	41	41	41	41	41	41	0516	WOODBINE

T9 TOURISM DIVERTED FROM EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 7?

490018	586377	474373	466960	459690	452558	445563	438701	431970	425368	418891
229175	319983	299511	295744	292046	288416	284851	281352	277916	274543	271230
198341	119996	101481	100291	99125	97980	96858	95756	94676	93616	92577
142505	203782	176413	174075	171783	169533	167326	165160	163034	160949	158903
73282	83287	61722	54961	49665	45492	42203	39610	37566	35954	34683
21568	25366	20039	17828	16083	14696	13594	12719	12023	11470	11030
45562	29036	21505	19504	17948	16731	15777	15030	14445	13987	13628
26960	35268	26170	23371	21180	19453	18092	17019	16173	15506	14980
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
11981	14274	12408	12138	11877	11622	11375	11135	10902	10675	10455
5740	7980	7086	6948	6813	6682	6555	6431	6311	6194	6080
3799	2294	1936	1903	1870	1838	1808	1778	1749	1721	1693
4508	6414	5527	5419	5313	5210	5111	5014	4920	4828	4739
69206	79054	58709	52444	47477	43520	40364	37847	35840	34240	32963
13274	15682	12447	11111	10044	9187	8499	7946	7501	7144	6857
5842	3726	2757	2506	2308	2151	2027	1929	1851	1789	1740
4563	5998	4459	3994	3626	3333	3098	2912	2763	2644	2550

T10 TOURISM LOST FROM SHOREFRONT STUDY AREA BY EACH MUNICIPALITY, BY GROUP TYPE AND YEAR (IN PERSON-DAYS) 72

124138	172981	139940	137753	135609	133505	131441	129417	127431	125483	123573
58058	71996	67390	66542	65710	64894	64092	63304	62531	61772	61027
50246	31199	26385	26076	25772	25475	25183	24897	24616	24340	24070
36101	52983	45867	45260	44664	44079	43505	42942	42389	41847	41315
19542	21655	16048	14290	12913	11828	10973	10299	9767	9348	9018
5751	6595	5210	4635	4181	3821	3535	3307	3126	2982	2868
12150	7549	5591	5071	4667	4350	4102	3908	3756	3637	3543
7189	9170	6804	6077	5507	5058	4704	4425	4205	4032	3895
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
3035	3711	3226	3156	3088	3022	2958	2895	2835	2776	2718
1454	2075	1842	1806	1771	1737	1704	1672	1641	1610	1581
962	596	503	495	486	478	470	462	455	447	440
1142	1668	1437	1409	1381	1355	1329	1304	1279	1255	1232
18455	20554	15264	13635	12344	11315	10495	9840	9318	8902	8570
3540	4077	3236	2889	2612	2389	2210	2066	1950	1857	1783
1558	969	717	652	600	559	527	501	481	465	452
1217	1560	1159	1039	943	866	806	757	718	688	663

T11 TOTAL TOURISM LOSS FROM SHOREFRONT STUDY AREA FROM ALL MUNICIPALITIES, BY GROUP TYPE AND YEAR (IN PERSON-DAYS)

124138	172981	139940	137753	135609	133505	131441	129417	127431	125483	123573
58058	71996	67390	66542	65710	64894	64092	63304	62531	61772	61027
50246	31199	26385	26076	25772	25475	25183	24897	24616	24340	24070
36101	52983	45867	45260	44664	44079	43505	42942	42389	41847	41315
19542	21655	16048	14290	12913	11828	10973	10299	9767	9348	9018
5751	6595	5210	4635	4181	3821	3535	3307	3126	2982	2868
12150	7549	5591	5071	4667	4350	4102	3908	3756	3637	3543
7189	9170	6804	6077	5507	5058	4704	4425	4205	4032	3895
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0
3035	3711	3226	3156	3088	3022	2958	2895	2835	2776	2718
1454	2075	1842	1806	1771	1737	1704	1672	1641	1610	1581
962	596	503	495	486	478	470	462	455	447	440
1142	1668	1437	1409	1381	1355	1329	1304	1279	1255	1232
18455	20554	15264	13635	12344	11315	10495	9840	9318	8902	8570
3540	4077	3236	2889	2612	2389	2210	2066	1950	1857	1783
1558	969	717	652	600	559	527	501	481	465	452
1217	1560	1159	1039	943	866	806	757	718	688	663

T12 FISCAL IMPACT FROM MIGRATION, BY MUNICIPALITY AND YEAR (IN THOUSAND DOLLARS)

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0101	ABSECON
-0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0102	ATLANTIC CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0103	BRIGANTINE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0106	CORBIN CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0107	EGG HARBOR CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0109	ESTELL MANOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0111	GALLOWAY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0112	HAMILTON
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0114	LINWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0115	LONGPORT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0116	MARGATE CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0118	NORTHFIELD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0119	PLEASANTVILLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0120	PORT REPUBLIC
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0121	SOMERS POINT
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0122	VENTNOR CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0123	WEYMOUTH
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0501	AVALON
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0504	DENNIS
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0505	LOWER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0506	MIDDLE
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0507	NORTH WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0508	OCEAN CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0509	SEA ISLE CITY
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0510	STONE HARBOR
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0511	UPPER
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0513	WEST WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0514	WILDWOOD
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0515	WILDWOOD CREST
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0516	WOODBINE

T13 VALUE LOST BY SEASONAL HOME OWNERS FOR EACH MUNICIPALITY, BY YEAR (IN THOUSAND DOLLARS) 72

10577.2	12274.4	10494.7	10348.0	10204.0	10062.8	9924.2	9788.2	9654.8	9523.8	9395.4

T14 TOURISM INDUSTRY FINAL DEMAND LOSS FOR EACH MUNICIPALITY, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS) 72

2876	3263	2637	2498	2384	2290	2211	2144	2087	2038	1996
68	70	52	47	42	39	36	34	32	31	30
3044	3146	2354	2104	1908	1753	1631	1535	1459	1399	1352
0	0	0	0	0	0	0	0	0	0	0
11815	13246	10791	10286	9871	9523	9230	8980	8765	8577	8412
7486	8550	7125	6902	6711	6544	6396	6265	6147	6039	5939
7633	8718	7266	7038	6843	6673	6522	6388	6268	6158	6056
8866	10233	8691	8530	8380	8240	8108	7983	7864	7749	7639
2080	2402	2042	2006	1972	1940	1910	1881	1853	1826	1801
517	600	513	505	498	491	485	478	472	465	459
0	0	0	0	0	0	0	0	0	0	0

T15 REGIONAL EXPENDITURES FOR MATERIALS AND EQUIPMENT, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS) FACILITY # 1

3	36	0	0	0	0	0	0	0	0	0	0
12	23	0	0	0	0	0	0	0	0	0	0
16	69	0	0	0	0	0	0	0	0	0	0
18	42	0	0	0	0	0	0	0	0	0	0
19	3	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	4	0	0	0	0	0	0	0	0	0	0
38	169	0	0	0	0	0	0	0	0	0	0
39	7	0	0	0	0	0	0	0	0	0	0
40	5	0	0	0	0	0	0	0	0	0	0
41	4	0	0	0	0	0	0	0	0	0	0
42	18	0	0	0	0	0	0	0	0	0	0
43	167	0	0	0	0	0	0	0	0	0	0
44	29	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	2193	0	0	0	0	0	0	0	0	0	0
47	244	0	0	0	0	0	0	0	0	0	0
48	63	0	0	0	0	0	0	0	0	0	0
49	153	0	0	0	0	0	0	0	0	0	0
50	52	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0
52	6	0	0	0	0	0	0	0	0	0	0
53	88	0	0	0	0	0	0	0	0	0	0
54	273	0	0	0	0	0	0	0	0	0	0
55	34	0	0	0	0	0	0	0	0	0	0
56	232	0	0	0	0	0	0	0	0	0	0

T16 TOURISM INDUSTRY FINAL DEMAND LOSS, BY WRC ECONOMIC SECTOR AND YEAR (IN THOUSAND DOLLARS)

15	59	69	55	52	50	48	46	45	44	43	42
18	132	162	138	136	134	132	130	128	127	125	123
34	740	872	722	698	678	661	646	632	620	609	599
54	1700	2002	1655	1599	1551	1510	1474	1442	1414	1388	1364
56	2654	2789	2250	2139	2047	1972	1909	1855	1810	1770	1736

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T17  FINAL DEMAND CHANGE FOR SHOREFRONT STUDY AREA, BY SECTOR AND YEAR (IN THOUSAND DOLLARS)
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
      36       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
      23       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
     -59     -69     -55     -52     -50     -48     -46     -45     -44     -43     -42
      69       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
     -90    -162    -138    -136    -134    -132    -130    -128    -127    -125    -123
     169     340     340     340     340     340     340     340     340     340     340
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
    -740    -872    -722    -698    -678    -661    -646    -632    -620    -609    -599
      10      20      20      20      20      20      20      20      20      20      20
      65     124     124     124     124     124     124     124     124     124     124
       0       0       0       0       0       0       0       0       0       0       0
     169       0       0       0       0       0       0       0       0       0       0
      66     120     120     120     120     120     120     120     120     120     120
       5       0       0       0       0       0       0       0       0       0       0
       4       0       0       0       0       0       0       0       0       0       0
      28      21      21      21      21      21      21      21      21      21      21
     210      88      88      88      88      88      88      88      88      88      88
      29       0       0       0       0       0       0       0       0       0       0
       0       0       0       0       0       0       0       0       0       0       0
    2193       0       0       0       0       0       0       0       0       0       0
     244       0       0       0       0       0       0       0       0       0       0
      63       0       0       0       0       0       0       0       0       0       0
     153       0       0       0       0       0       0       0       0       0       0
      52       0       0       0       0       0       0       0       0       0       0
      63     128     128     128     128     128     128     128     128     128     128
       6       0       0       0       0       0       0       0       0       0       0
     169     165     165     165     165     165     165     165     165     165     165
   -1620   -1956   -1609   -1553   -1505   -1464   -1428   -1396   -1368   -1342   -1318
     267     477     477     477     477     477     477     477     477     477     477
   -2234   -2405   -1866   -1755   -1663   -1588   -1525   -1471   -1426   -1386   -1352
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T18 ECONOMIC ACTIVITY CHANGE FOR SHOREFRONT STUDY AREA, CHANGE IN GROSS OUTPUT, BY YEAR (IN THOUSAND DOLLARS)

-3168	-14681	-10954	-10273	-9702	-9226	-8817	-8459	-8156	-7879	-7633

T19 TOURISM INDUSTRY FINAL DEMAND LOSS, BY TYPE OF VISITOR EXPENDITURE AND YEAR (IN THOUSAND DOLLARS)

746	861	694	658	628	603	583	565	550	537	526
18	18	14	12	11	10	9	9	8	8	8
812	818	612	547	496	456	424	399	379	364	352
0	0	0	0	0	0	0	0	0	0	0
3057	3504	2845	2713	2604	2513	2436	2370	2313	2264	2220
1918	2273	1885	1827	1776	1732	1693	1658	1627	1598	1572
1956	2318	1923	1863	1811	1766	1727	1691	1659	1630	1603
2253	2733	2307	2264	2224	2187	2152	2118	2086	2056	2026
528	641	542	533	523	515	507	499	492	485	478
131	160	136	134	132	131	129	127	125	124	122
419	260	208	199	191	185	179	175	172	168	166

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	-201	-285	-188	-170	-155	-142	-131	-122	-114	-106	-100
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	2387	-1190	1901	2463	2937	3332	3674	3971	4229	4455	4659
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	-285	-1596	-402	-189	-8	143	274	388	487	575	654
VALUE ADDED (THOUSAND DOLLARS)	-607	-2006	-272	41	305	526	717	883	1027	1155	1269
STATE TAXES (THOUSAND DOLLARS)	-381	-481	-346	-320	-298	-280	-265	-252	-240	-230	-221
LOCAL TAXES (THOUSAND DOLLARS)	-29	-124	-27	-10	5	17	28	37	45	52	59

Net Results

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	-467	-528	-431	-413	-398	-385	-374	-365	-357	-349	-343
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	-15004	-17000	-13909	-13347	-12874	-12478	-12136	-11840	-11581	-11355	-11151
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	-5814	-6601	-5408	-5194	-5013	-4862	-4731	-4617	-4518	-4431	-4352
VALUE ADDED (THOUSAND DOLLARS)	-8434	-9563	-7828	-7516	-7252	-7031	-6840	-6674	-6530	-6402	-6288
STATE TAXES (THOUSAND DOLLARS)	-647	-726	-591	-565	-544	-526	-510	-497	-485	-475	-467
LOCAL TAXES (THOUSAND DOLLARS)	-471	-534	-437	-420	-405	-393	-383	-373	-365	-358	-352

Impacts of Tourism Loss Only

T20 NEW JERSEY SOCIAL AND ECONOMIC IMPACTS, BY YEAR

FACILITY TYPE 1

FINAL IMPACT \ YEAR	1	2	3	4	5	6	7	8	9	10	11
EMPLOYMENT (PERSON-YEARS)	266	243	243	243	243	243	243	243	243	243	243
GROSS ECONOMIC OUTPUT (THOUSAND DOLLARS)	17391	15810	15810	15810	15810	15810	15810	15810	15810	15810	15810
WAGES PAID TO RESIDENTS (THOUSAND DOLLARS)	5529	5005	5005	5005	5005	5005	5005	5005	5005	5005	5005
VALUE ADDED (THOUSAND DOLLARS)	7827	7557	7557	7557	7557	7557	7557	7557	7557	7557	7557
STATE TAXES (THOUSAND DOLLARS)	266	245	245	245	245	245	245	245	245	245	245
LOCAL TAXES (THOUSAND DOLLARS)	441	410	410	410	410	410	410	410	410	410	410

Impacts of Facility Construction and Employment Only

AIDS TO THE INTERPRETATION OF CASE STUDY RESULTS

AIDS TO THE INTERPRETATION OF CASE STUDY RESULTS

Following are a set of tables, matrices, and other information referred to in this appendix that will aid the reader interpret the results of the case studies.

T8 SCHEDULE OF ENVIRONMENTAL CHANGES

Facility type: SUPPORT BASE (FACILITY #1)

Change No.	Description of Environmental Change Category	Years 1	2	3	4	5	6	7	8	9	10	11
		(1 for presence, 0 for absence)										
1	LOSS OF ACCESS TO REC. RESOURCE	1	1	1	1	1	1	1	1	1	1	1
	Pre-emption of land	*	*	*	*	*	*	*	*	*	*	*
2	LOSS IN QUALITY OR DEGREE OF RECREATION OPPORTUNITY	1	0	0	0	0	0	0	0	0	0	0
	Faunal Abundance	-	o	o	o	o	o	o	o	o	o	o
	Faunal Diversity	-	o	o	o	o	o	o	o	o	o	o
	Water Depth	#	-	-	-	-	#	-	-	-	-	#
	Shoreline Changes	*	o	o	o	o	o	o	o	o	o	o
	Traffic Congestion	-	o	o	o	o	o	o	o	o	o	o
3	LOWERING OF VISUAL QUALITY	1	0	0	0	0	0	0	0	0	0	0
	Turbidity	#	o	o	o	o	#	o	o	o	o	#
	Dust	o	-	-	-	-	-	-	-	-	-	-
	Surface Coverage	#	o	o	o	o	o	o	o	o	o	o
	Aesthetics-Minor Visual-Ocean	o	o	o	o	o	o	o	o	o	o	o
	Aesthetics-Minor Visual-Not Ocean	-	-	-	-	-	-	-	-	-	-	-
	Aesthetics-Major Visual-Ocean	o	o	o	o	o	o	o	o	o	o	o
4	LOWERING OF OTHER AESTHETIC QUALITY	0	0	0	0	0	0	0	0	0	0	0
	Noise	o	#	#	#	#	#	#	#	#	#	#
	Odor	-	o	o	o	o	o	o	o	o	o	o
5	INTRODUCTION OF A HAZARD TO HEALTH, SAFETY, OR THE ENVIRONMENT	0	1	1	1	1	1	1	1	1	1	1
	Toxic Substances	o	*	*	*	*	*	*	*	*	*	*
	Pathogens	o	-	-	-	-	-	-	-	-	-	-
	Hazardous Substances	o	*	*	*	*	*	*	*	*	*	*
6	TEMPORARY LOSS OF RESOURCE DUE TO POLLUTION	0	0	0	0	0	0	0	0	0	0	0
	Pre-emption by Pollution	-	o	o	o	o	o	o	o	o	o	o

KEY TO SYMBOLS

* High Probability
\# Moderate Probability
o Low Probability
\- Minimal Probability or No Chance of Occurrence

T8 SCHEDULE OF ENVIRONMENTAL CHANGES

Facility type: COAL-FIRED POWER PLANT (FACILITY #10)

Change No.	Description of Environmental Change Category	Years 1	2	3	4	5	6	7	8	9	10	11
		(1 for presence, 0 for absence)										
1	LOSS OF ACCESS TO REC. RESOURCE	1	1	1	1	1	1	1	1	1	1	1
	Pre-emption of land	*	*	*	*	*	*	*	*	*	*	*
2	LOSS IN QUALITY OR DEGREE OF RECREATION OPPORTUNITY	0	0	1	1	1	o	o	o	o	o	o
	Faunal Abundance	o	#	#	#	#	o	o	o	o	o	o
	Faunal Diversity	o	o	o	o	o	o	o	o	o	o	o
	Water Depth	o	o	o	o	o	-	-	-	-	-	-
	Shoreline Changes	o	o	o	o	o	-	-	-	-	-	-
	Traffic Congestion	o	o	*	*	*	o	o	o	o	o	o
3	LOWERING OF VISUAL QUALITY	0	0	1	1	1	1	1	1	1	1	1
	Turbidity	o	o	o	o	o	o	o	o	o	o	o
	Dust	#	#	#	#	#	-	-	-	-	-	-
	Surface Coverage	o	o	o	o	o	o	o	o	o	o	o
	Aesthetics-Minor Visual-Ocean	o	o	#	#	#	#	#	#	#	#	#
	Aesthetics-Minor Visual-Not Ocean	o	o	#	#	*	*	*	*	*	*	*
	Aesthetics-Major Visual-Ocean	-	-	o	o	o	o	o	o	o	o	o
4	LOWERING OF OTHER AESTHETIC QUALITY	0	0	1	1	1	1	1	1	1	1	1
	Noise	o	o	*	*	*	*	*	*	*	*	*
	Odor	-	-	-	-	-	-	-	-	-	-	-
5	INTRODUCTION OF A HAZARD TO HEALTH, SAFETY, OR THE ENVIRONMENT	0	0	0	0	0	0	0	0	0	0	0
	Toxic Substances	o	o	o	o	o	-	-	-	-	-	-
	Pathogens	o	o	o	o	o	-	-	-	-	-	-
	Hazardous Substances	-	-	-	-	-	-	-	-	-	-	-
6	TEMPORARY LOSS OF RESOURCE DUE TO POLLUTION	0	0	0	0	0	0	0	0	0	0	0
	Pre-emption by Pollution	-	-	-	-	-	-	-	-	-	-	-

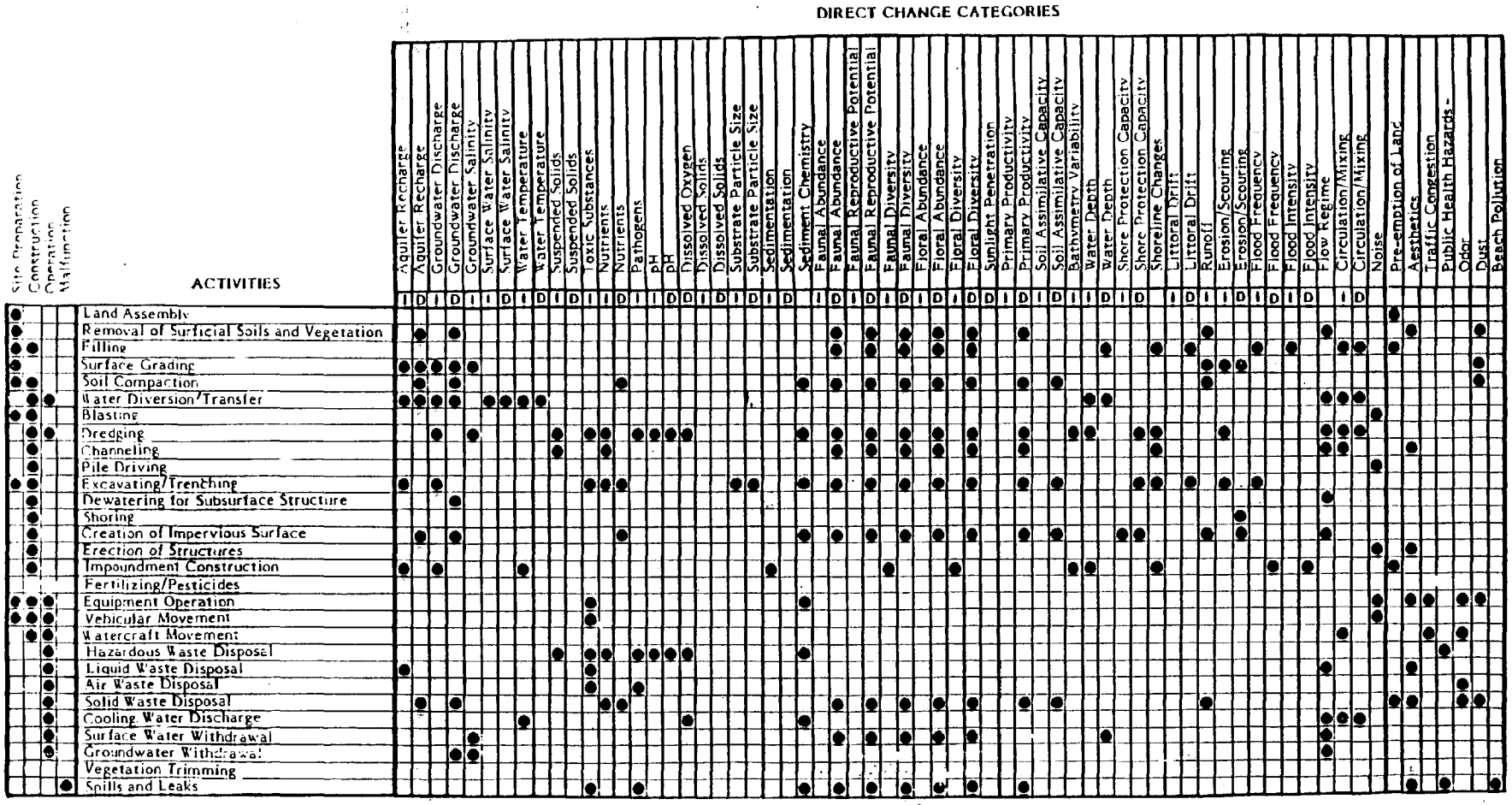
KEY TO SYMBOLS

* High Probability
\# Moderate Probability
o Low Probability
\- Minimal Probability or No Chance of Occurrence

FACILITY IMPACT ASSESSMENT MATRIX

ACTIVITIES - DIRECT CHANGE CATEGORIES

Coal-fired Power Plant



FACILITY IMPACT ASSESSMENT MATRIX

ACTIVITIES - DIRECT CHANGE CATEGORIES

Support Base

DIRECT CHANGE CATEGORIES

ACTIVITIES	Site Preparation	Construction	Operation	Malfunction
Land Assembly	●			
Removal of Surficial Soils and Vegetation	●			
Filling	●	●		
Surface Grading	●			
Soil Compaction	●	●		
Water Diversion/Transfer				
Blasting				
Dredging		●	●	
Channeling		●		
Pile Driving				
Excavating/Trenching				
Dewatering for Subsurface Structure				
Shoring		●		
Creation of Impervious Surface		●		
Erection of Structures		●		
Impoundment Construction				
Fertilizing/Pesticides				
Equipment Operation	●	●	●	
Vehicular Movement	●	●	●	
Watercraft Movement		●	●	
Hazardous Waste Disposal			●	
Liquid Waste Disposal			●	
Air Waste Disposal				
Solid Waste Disposal				
Cooling Water Discharge				
Surface Water Withdrawal				
Groundwater Withdrawal				
Vegetation Trimming				
Spills and Leaks				●

DIRECT CHANGE CATEGORIES	I	D
Aquifer Recharge	●	●
Aquifer Recharge		●
Groundwater Discharge	●	
Groundwater Discharge	●	●
Groundwater Salinity	●	
Surface Water Salinity		
Surface Water Salinity		
Water Temperature		
Water Temperature		
Suspended Solids	●	●
Suspended Solids		●
Toxic Substances	●	●
Nutrients	●	●
Nutrients		●
Pathogens	●	●
pH	●	
pH		●
Dissolved Oxygen	●	●
Dissolved Solids		
Dissolved Solids		●
Substrate Particle Size	●	
Substrate Particle Size		●
Sedimentation	●	
Sedimentation		●
Sediment Chemistry	●	
Faunal Abundance		●
Faunal Abundance	●	●
Faunal Reproductive Potential	●	
Faunal Reproductive Potential		●
Faunal Diversity	●	
Faunal Diversity		●
Floral Abundance	●	
Floral Abundance		●
Floral Diversity	●	
Floral Diversity		●
Sunlight Penetration	●	
Primary Productivity	●	
Primary Productivity		●
Soil Assimilative Capacity	●	
Soil Assimilative Capacity		●
Bathymetry Variability	●	
Water Depth	●	
Water Depth		●
Shore Protection Capacity	●	
Shore Protection Capacity		●
Shoreline Changes		
Littoral Drift	●	
Littoral Drift		●
Runoff	●	
Erosion/Scouring	●	
Erosion/Scouring		●
Flood Frequency	●	
Flood Frequency		●
Flood Intensity	●	
Flood Intensity		●
Flow Regime		
Circulation/Mixing	●	
Circulation/Mixing		●
Noise		
Pre-emption of Land	●	
Aesthetics		
Traffic Congestion		
Public Health Hazards		
Odor		
Dust		
Reach Pollution		

NOTE: The following four pages contain information from the New Jersey Shorefront Municipality Data Base. The data base contains over 50 variables, or items of information, on the social, fiscal, demographic and physical characteristics of each of the 127 municipalities within the four-county shorefront region, of which the study area is a part. When accessed by the model user, the data base provides two screen pages of information on each municipality. The screen pages of the four municipalities considered in the case studies have been reprinted here, exactly as they appear on the screen, for the convenience of the reader.

1.	Municipality	LACEY	16.	Pop. over 65	2,539
2.	Type	T	17.	Total Households	5,107
3.	County	OCEAN	18.	Homes with over 60	2,262
4.	ID Code	34029 15122	19.	Urban Housing	0 0.00%
5.	Coastal Zone	1	20.	Occupied year round	5,107
6.	Shorefront	0	21.	Vacant year round	196
7.	Rank Order	43	22.	Renter housing	481
8.	In Study Area	1	23.	Vacant for rent	13
9.	Population, 1980	14,161	24.	Vacant for temp use	31
10.	Housing Units, 1980	6,513	25.	Value owner housing	0.00
11.	Change in Units '70-'80	80.4	26.	Contract rent	260.00
12.	Marina Slips	1,063	27.	Hotel/motel rooms	0
13.	Average Slip Income	503.76	28.	Room income/day	0.00
14.	Total Slip Income	535,495.00	29.	Campsites	0
15.	Pop. 18-64	7,739	30.	Campsite income/day	0.00

1.	Municipality	LACEY	43.	pop retired	6.20
2.	Type	T	44.	equaliz. ratio	.64
3.	County	OCEAN	45.	per cap mun service	567.00
31.	Restaurant Sales	2,643,460	46.	total mun revenues	255.49
32.	Serv. Sta. Sales	1,855,523	47.	est of visitors proj	22,440.00
33.	Overnight accom income	521,774	48.	program flag for emp.	0.00
34.	Amusements income	2,200,850			
35.	Seasonal population	22,400			
36.	No. of campsites (2)	0			
37.	No. of hotel rooms (2)	0		Val of other land	231,293,000
38.	Comercial prop. val.	15,991,700.00		Percent indust. land val.	4.10%
39.	Indust. prop. val.	10,579,300.00		Seasonal & Migratory Hsg.	1,241
40.	total real prop. val.	257,864,000.00		Percent Seasonal & Mig.	19.05%
41.	Land Area	84.60		Owner occupied housing	4,626
42.	PCTOM	975.92		Percent owner occupied	90.58%

1.	Municipality	MANASQUAN	16.	Pop. over 65	1,002
2.	Type	B	17.	Total Households	2,119
3.	County	MONMOUTH	18.	Homes with over 60	928
4.	ID Code	34025 13271	19.	Urban Housing	3,120 100%
5.	Coastal Zone	1	20.	Occupied year round	2,119
6.	Shorefront	1	21.	Vacant year round	162
7.	Rank Order	26	22.	Renter housing	578
8.	In Study Area	1	23.	Vacant for rent	31
9.	Population, 1980	5,354	24.	Vacant for temp use	56
10.	Housing Units, 1980	3,120	25.	Value owner housing	0.00
11.	Change in Units '70-'80	8.3	26.	Contract rent	236.00
12.	Marina Slips	126	27.	Hotel/motel rooms	0
13.	Average Slip Income	548.61	28.	Room income/day	0.00
14.	Total Slip Income	69,124.65	29.	Campsites	0
15.	Pop. 18-64	3,123	30.	Campsite income/day	0.00

1.	Municipality	MANASQUAN	43.	pop retired	13.47
2.	Type	B	44.	equaliz. ratio	0.42
3.	County	MONMOUTH	45.	per cap mun service	290.00
31.	Restaurant Sales	2,363,000	46.	total mun revenues	276.06
32.	Serv. Sta. Sales	4,635,000	47.	est of visitors proj	9,529.00
33.	Overnight accom income	605,500	48.	program flag for emp.	0.00
34.	Amusements income	419,000			
35.	Seasonal population	9,529			
36.	No. of campsites (2)	0			
37.	No. of hotel rooms (2)	0		Val of other land	60,870,800.00
38.	Comercial prop. val.	9,571,900.00		Percent indust. land val.	.84%
39.	Indust. prop. val.	599,000.00		Seasonal & Migratory Hsg.	897
40.	total real prop. val.	71,041,700.00		Percent Seasonal & Mig.	28.75%
41.	Land Area	1.40		Owner occupied housing	1,541
42.	PCTOM	411.03		Percent owner occupied	72.72%

1.	Municipality	Middle	16.	Pop. over 65	2,137
2.	Type	T	17.	Total Households	4,159
3.	County	CAPE MAY	18.	Homes with over 60	1,766
4.	ID Code	34009 05065	19.	Urban Housing	0
5.	Coastal Zone	1	20.	Occupied year round	4,159
6.	Shorefront	1	21.	Vacant year round	422
7.	Rank Order	78	22.	Renter housing	726
8.	In Study Area	1	23.	Vacant for rent	60
9.	Population, 1980	11,373	24.	Vacant for temp use	103
10.	Housing Units, 1980	5,673	25.	Value owner housing	0.00
11.	Change in Units '70-'80	38.7	26.	Contract rent	206
12.	Marina Slips	46	27.	Hotel/motel rooms	0
13.	Average Slip Income	494.75	28.	Room income/day	0
14.	Total Slip Income	22,758.50	29.	Campsites	4,106
15.	Pop. 18-64	6,185	30.	Campsite income/day	20,897.50

1.	Municipality	Middle	43.	pop retired	20.18
2.	Type	C	44.	equaliz. ratio	.84
3.	County	CAPE MAY	45.	per cap mun service	323.00
31.	Restaurant Sales	4,978,238	46.	total mun revenues	220.61
32.	Serv. Sta. Sales	3,721,838	47.	est of visitors proj	37,522
33.	Overnight accom income	3,954,371	48.	program flag for emp.	0.00
34.	Amusements income	1,059,059			
35.	Seasonal population	37,522			
36.	No. of campsites (2)	4,197			
37.	No. of hotel rooms (2)	258		Val of other land	152,939,000
38.	Comercial prop. val.	39,119,300		Percent indust. land val.	93%
39.	Indust. prop. val.	1,808,400		Seasonal & Migratory Hsg.	1,218
40.	total real prop. val.	193,866,700		Percent Seasonal & Mig.	21.47%
41.	Land Area	74.02		Owner occupied housing	3,433
42.	PCTOM	881.66		Percent owner occupied	82.54%

1.	Municipality	OCEAN CITY	16.	Pop. over 65	3,639
2.	Type	C	17.	Total Households	6,255
3.	County	CAPE MAY	18.	Homes with over 60	3,124
4.	ID Code	34009 05086	19.	Urban Housing	16,716 (100%)
5.	Coastal Zone	1	20.	Occupied year round	6,255
6.	Shorefront	1	21.	Vacant year round	1,189
7.	Rank Order	72	22.	Renter housing	2,579
8.	In Study Area	1	23.	Vacant for rent	193
9.	Population, 1980	13,949	24.	Vacant for temp use	585
10.	Housing Units, 1980	13,949	25.	Value owner housing	0.00
11.	Change in Units '70-'80	26.9	26.	Contract rent	253.00
12.	Marina Slips	530	27.	Hotel/motel rooms	607
13.	Average Slip Income	552.47	28.	Room income/day	25,788.00
14.	Total Slip Income	292,807.75	29.	Campsites	0
15.	Pop. 18-64	7,761	30.	Campsite income/day	0.00

1.	Municipality	OCEAN CITY	43.	pop retired	8.94
2.	Type	C	44.	equaliz. ratio	0.65
3.	County	CAPE MAY	45.	per cap mun service	767.00
31.	Restaurant Sales	8,408,000	46.	total mun revenues	722.20
32.	Serv. Sta. Sales	3,624,000	47.	est of visitors proj	105,492.00
33.	Overnight accom income	6,082,000	48.	program flag for emp.	0.00
34.	Amusements income	2,184,000			
35.	Seasonal population	105,492			
36.	No. of campsites (2)	0			
37.	No. of hotel rooms (2)	4,444		Val of other land	611,761,500.00
38.	Comercial prop. val.	60,064,600.00		Percent indust. land val.	0.02%
39.	Indust. prop. val.	158,800.00		Seasonal & Migratory Hsg.	9,921
40.	total real prop. val.	671,984,900.00		Percent Seasonal & Mig.	59.35%
41.	Land Area	5.83		Owner occupied housing	3,676
42.	PCTOM	2,099.32		Percent owner occupied	58.77%

VISITOR GROUP TYPES

Visitor Type	Accommodation	Activity
1	Seasonal Home	Shorefront Rec.
2	Seasonal Home	Bay-Water Rec.
3	Seasonal Home	Entertainment
4	Seasonal Home	Visit Friends
5	Hotel or Motel	Shorefront Rec.
6	Hotel or Motel	Bay-Water Rec.
7	Hotel or Motel	Entertainment
8	Hotel or Motel	Visit Friends
9	Campground	Shorefront Rec.
10	Campground	Bay-Water Rec.
11	Campground	Entertainment
12	Campground	Visit Friends
13	Home of Friend	Shorefront Rec.
14	Home of Friend	Bay-Water Rec.
15	Home of Friend	Entertainment
16	Home of Friend	Visit Friends
17	Day Party	Shorefront Rec.
18	Day Party	Bay-Water Rec.
19	Day Party	Entertainment
20	Day Party	Visit Friends

VISITOR EXPENDITURE CATEGORIES

1. Gasoline service station
2. Automobile rental
3. Hotels, motels and inns
4. Campgrounds and trailer parks
5. Eating and drinking establishments
6. Amusement and recreational services
7. General retail trade
8. Groceries
9. Package liquor
10. Home maintenance
11. Gambling

WRC Sector Definitions

Water Resource Council Sector Number	Industry Title
1.	Dairy farm products
2.	Poultry and eggs
3.	Meat, animals, and miscellaneous livestock products
4.	Cotton
5.	Food, feed grains, and grass seeds
6.	Tobacco
7.	Fruits and tree nuts
8.	Vegetable crops
9.	Oil bearing crops
10.	Forest, greenhouse, and nursery products
11.	Forestry and fishery products
12.	Agricultural, forestry, and fishery services
13.	Metal mining
14.	Anthracite, bituminous coal and lignite mining
15.	Oil and gas extraction
16.	Fertilizer mineral mining and nonmetallic minerals, except fuels and chemicals
17.	Chemical and fertilizer
18.	General building, heavy construction, special trade contractors
19.	Meat products
20.	Creamery butter
21.	Natural and processed cheese
22.	Condensed and evaporated milk
23.	Ice cream and frozen desserts
24.	Fluid milk
25.	Canned fruits and vegetables, and specialties
26.	Fresh and frozen packaged fish
27.	Frozen meats and vegetables
28.	Flour, cereal, and other grain-mill products
29.	Prepared feeds for animals

Water Resource Council Sector Number	Industry Title
30.	Cottonseed
31.	Vegetable, soybean and other oil mills
32.	Animal and marine fats and oils
33.	Shortening and cooking oils
34.	Other food products
35.	Tobacco manufacturing
36.	Textile mill products
37.	Logging camps and logging contractors
38.	Lumber and wood products, except logging camps, logging contractors, and wooden containers
39.	Wooden containers, furniture and fixtures
40.	Paper and allied products
41.	Printing, publishing
42.	Chemicals and allied products
43.	Petroleum and coal products
44.	Rubber and plastics products
45.	Leather and leather products
46.	Stone, clay, and glass products
47.	Primary metal industries
48.	Fabricated metal products
49.	Machinery, except electrical
50.	Electrical equipment and supplies
51.	Transportation equipment
52.	Accessories, instruments, and related products, Miscellaneous manufacturing industries
53.	Transportation, communication, and utilities
54.	Wholesale and retail trade
55.	Finance, insurance, and real estate
56.	Services

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